

HAVANA RUINS. Post-Embargo Habitación Regenerative Prototypes

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Bachelor of Design in Architecture
University of Florida, 2010

SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE IN PARTIAL
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American tourism influx is inevitable in the rapidly 'capitalizing' political context of Cuba. From the 1920's through the 1950's Americans were the dominate tourist on the island. Fast forward to today and Americans account for only about 5% of all visitors. But, this is all about to change. An additional one million American tourists are projected to invade Cuba within the first year the travel ban is lifted. Cuba receives around 2.5 million visitors annually, so this American influx represents a 40% increase in one year. How does a city deal with this type of boom, especially one as unique as Havana?

This thesis investigates prototypes for reconstructing both Cubano and tourist habitation in Centro Habana. A combination of Marxist ideals, morbid economy and trade embargo have torn the urban fabric and building stock. Ruin and decay thrive in the Caribbean Metropolis. Roughly 60% of Centro Havana's buildings are in deplorable condition, and it is said that a building collapses every 3 days. This has created a serious housing shortage as well as an opportunity for future tourism growth.

Sites of decay become the vessels for prototypical exploration and thus create a new urban experience for both locals and future tourists. This prototypical approach is applied in 2 key areas, new accommodation typologies as well as experimental reuse of building materials. Notions of how to inhabit the cities decay and blights translate into new typologies of hotels, hostels and micro-hotels. Excess construction debris, prolific in the city today, becomes repurposed as a new medium for material systems. This reuse of brick translates into facade, screen and surface systems that compose a new regenerative typology for Havana.

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To my loving **Family** and **friends**.

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Thank you.

Clay Anderson
January 4th, 2013

TABLE OF CONTENTS



9 'Capitalizing' Cuba + Post-Embargo

15 Centro Havana: Sites of Decay

27 Architectural Palimpsest: Material Reuse

33 Old / New Building Systems

43 Tourism Demand + Typologies

55 Towards the Malecón- Detailed Prototypes

61 Casa Particular 2.0

65 Hotel 'Planta Eléctrica'

73 Micro-Hotel Centro

77 Hostel Ruinas

81 Malecón Plaza / Bridge / Jetty

97 Appendix- **99** Precedent Studies

105 Pecha Kucha Night

113 Thesis Defense

117 Bibliography

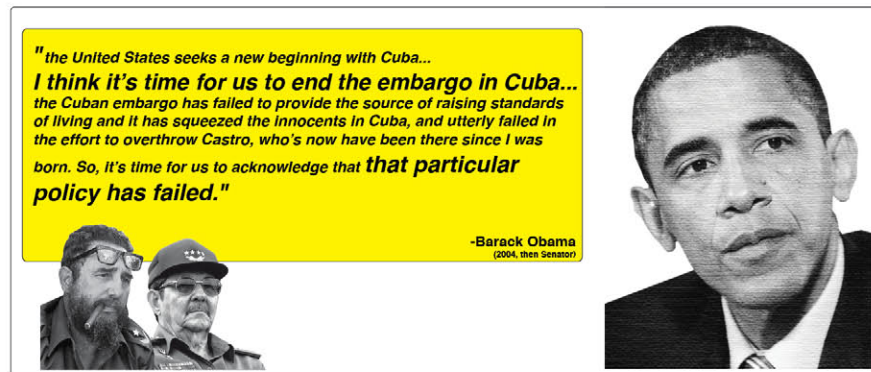


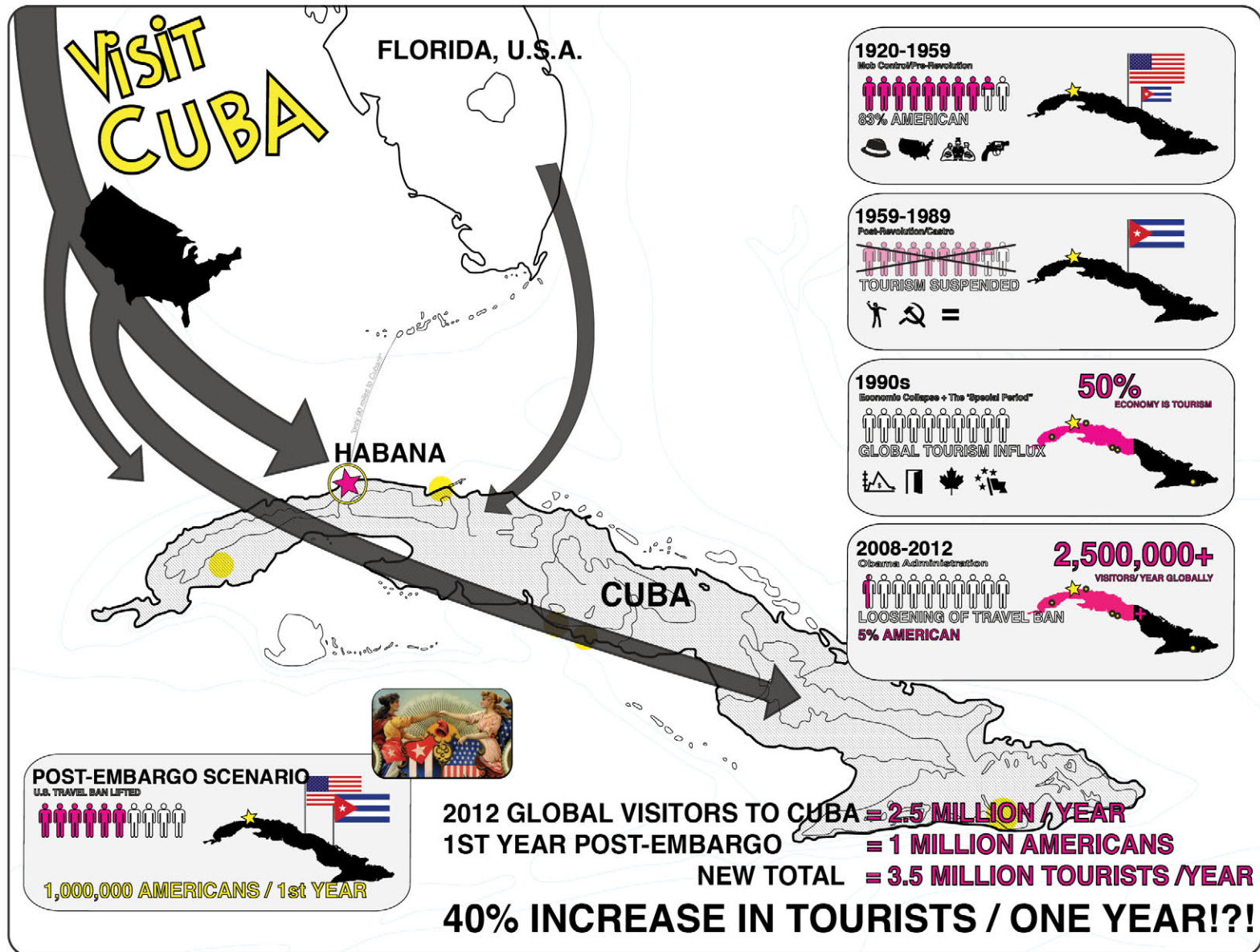
The Economist, March 24th-30th 2012, Special report on Cuba

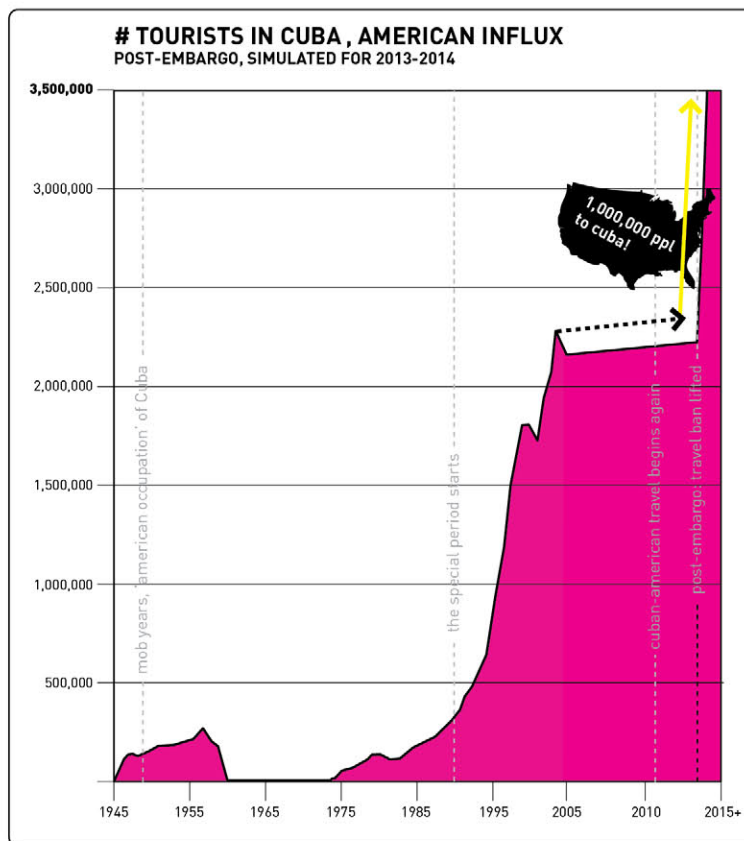
INTRODUCTION:

My thesis came about due to my fascination with Cuba. Growing up in South Florida, Cuban-American food and culture was easily attainable, I even have some Cuban Family through marriage. Though, I always envisioned how spectacular and mysterious the city of Havana was. Old neo-classical buildings, beautiful woman smoking cigars and vintage yank tanks pumping fumes was my idea of the Havana experience. How amazing this adventure would be, ... if only I weren't an American. As I got older my friends and I began to speculate what would happen to Cuba once Americans could return. I would gain a partial glimpse at all of my conjectures soon enough. Luckily this thesis gave me the opportunity to travel to Havana and around Cuba.

Change is inevitable in Cuba and a new capitalist 'revolution' is on the brink. With Fidel on the sidelines at 86 and his younger brother Raul in charge, the luster of the revolution seems to be fading. Currently the country's economy is extremely anemic, on life support and looking for new survival techniques. Raul Castro has implemented a number of progressive reforms to help bolster the flagging economy but the reforms also signal capitalism and a free market. These changes are similar to the reforms Fidel enacted after the collapse of the U.S.S.R during the early to mid 90's, including making tourism into a country wide phenomenon.





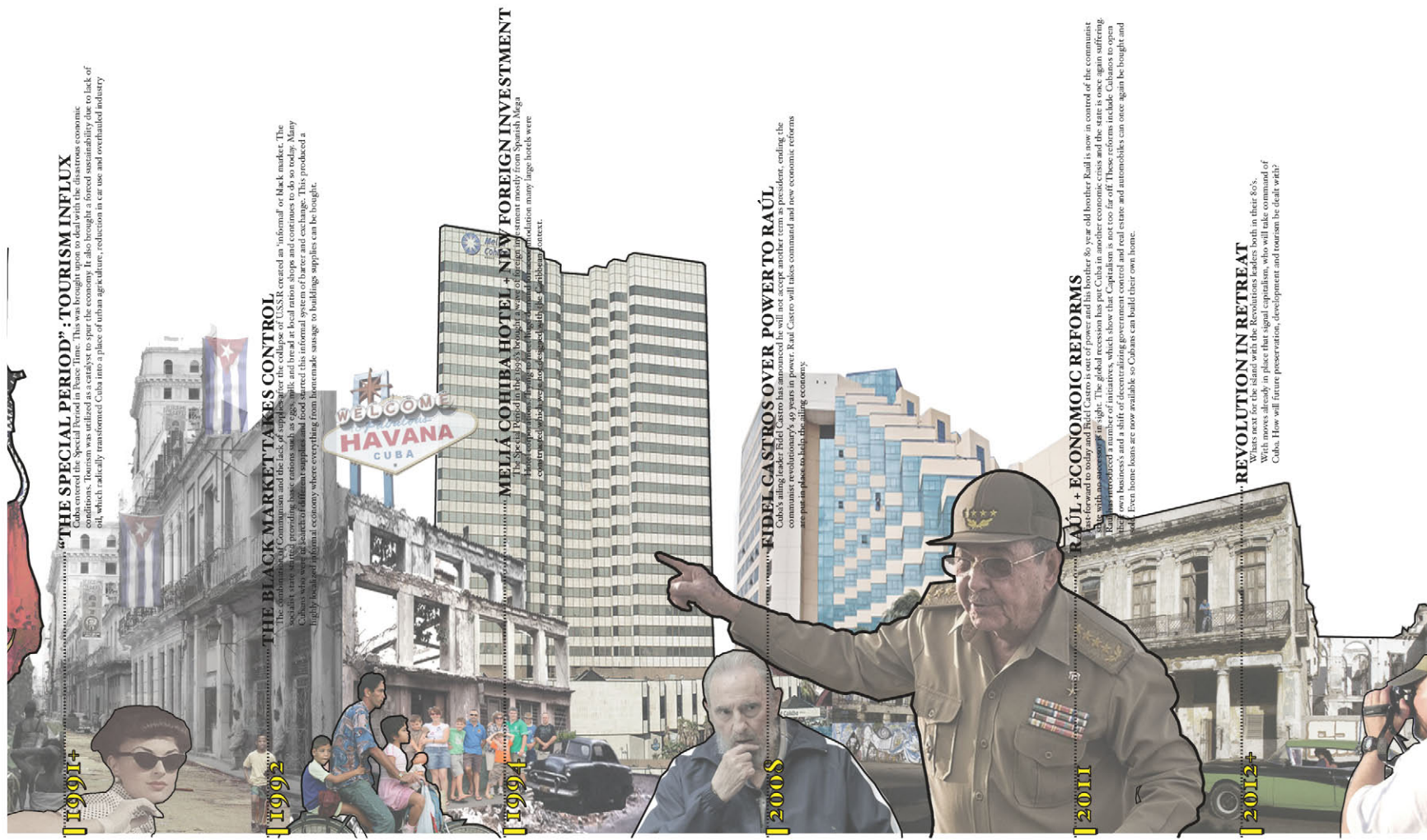


This time around many economists believe the political reform is irreversible and the Socialist regime's time is limited. The U.S. Embargo was put into place to squeeze the Communist stronghold but has done little to detour the Castro brothers. In 2004, then Senator Barack Obama was quoted as saying, "the United States seeks a new beginning with Cuba...I think it's time for us to end the embargo in Cuba...the Cuban embargo has failed to provide the source of raising standards of living and it has squeezed the innocents in Cuba, and utterly failed in the effort to overthrow Castro, who's now have been there since I was born. So, it's time for us to acknowledge that that particular policy has failed."

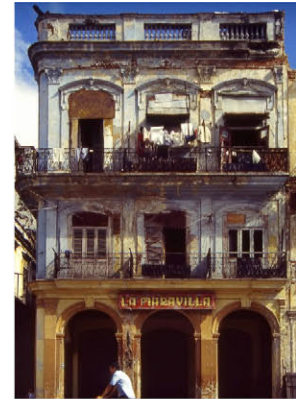
Many believe that if President Obama is elected another term in office, he may be the 1st U.S. President to seriously tackle ending the Trade Embargo against Cuba. This would send greatly increase tourist influx in Cuba. The International Monetary Fund projects that one million Americans will visit Cuba within the 1st year of the travel ban being lifted. Cuba only receives 2.5 million visitors a year currently, which means that Cuba's visitors annually would increase by 40%. Considering Havana gets over half of visitors to Cuba, this would have catastrophic impacts to the already overloaded infrastructure and lack of accommodation that already exists. This thesis investigates and forecasts the post-Embargo future for Havana on the level of urbanism and architecture regarding American tourism influx. The focus will be on regenerative prototypes for rebuilding Centro Havana.

1959 REVOLUCIÓN → 2011 RAÚL+ REFORMS






Before future tourism growth can be postulated, one must understand the level of issues the city of Havana is dealing with. Cuba's urban fabric and infrastructure has been facing a continual state of deterioration. The exquisite architecture and urbanism of Havana has been rapidly decaying because of economic and socio-political ramifications. The communist government has not focused on the ongoing problems of decay within the housing sector that is plaguing the cities historic core. This Cuban urbanism has been heavily influenced by a number of issues including the country's socialist politics, a 50 year long U.S. trade embargo that was placed upon it in the 1960's and population overcrowding.

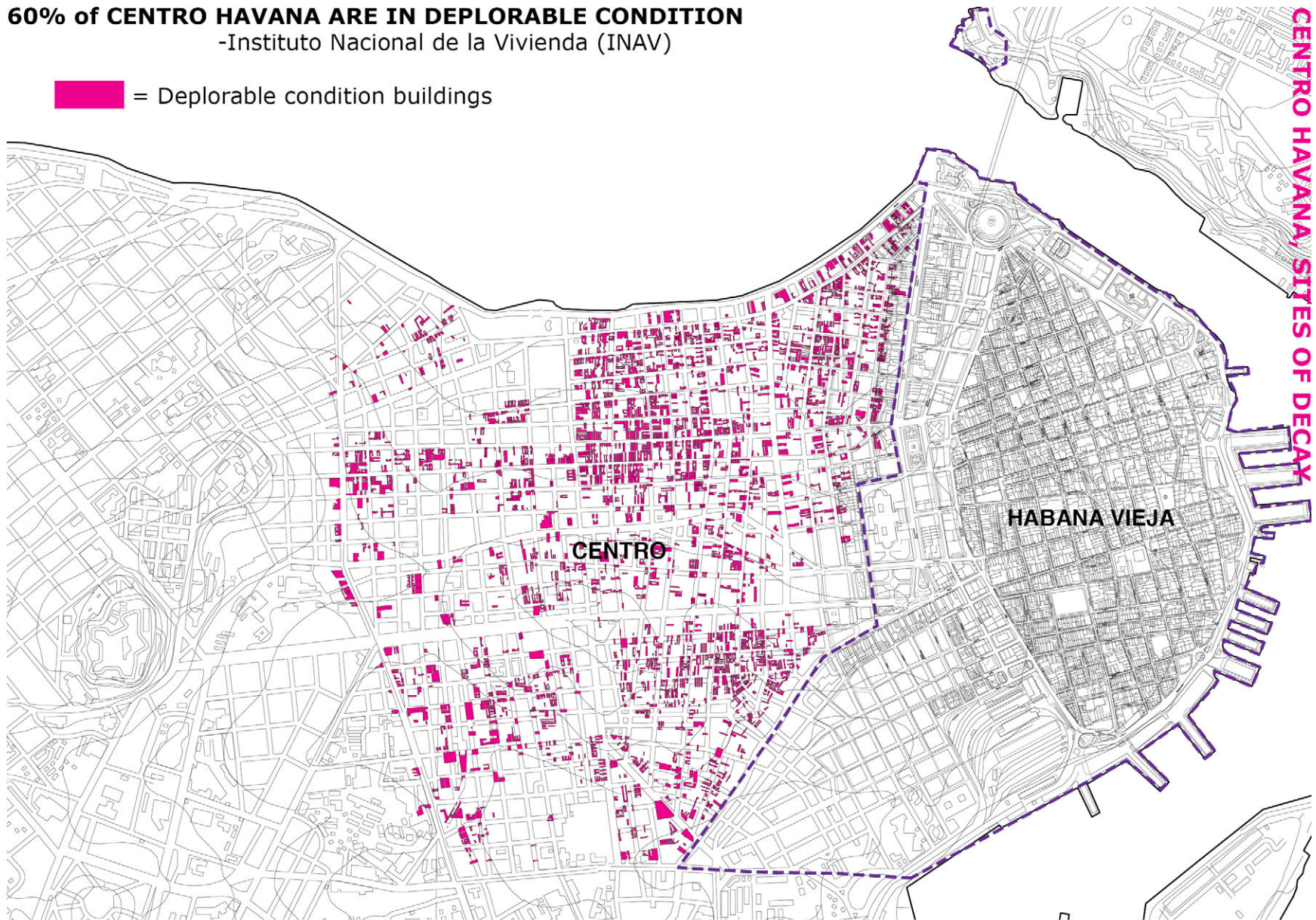


= building transformation: years of neglect produce decay, crumbling facades and damaged structures

60% of CENTRO HAVANA ARE IN DEPLORABLE CONDITION

-Instituto Nacional de la Vivienda (INAV)

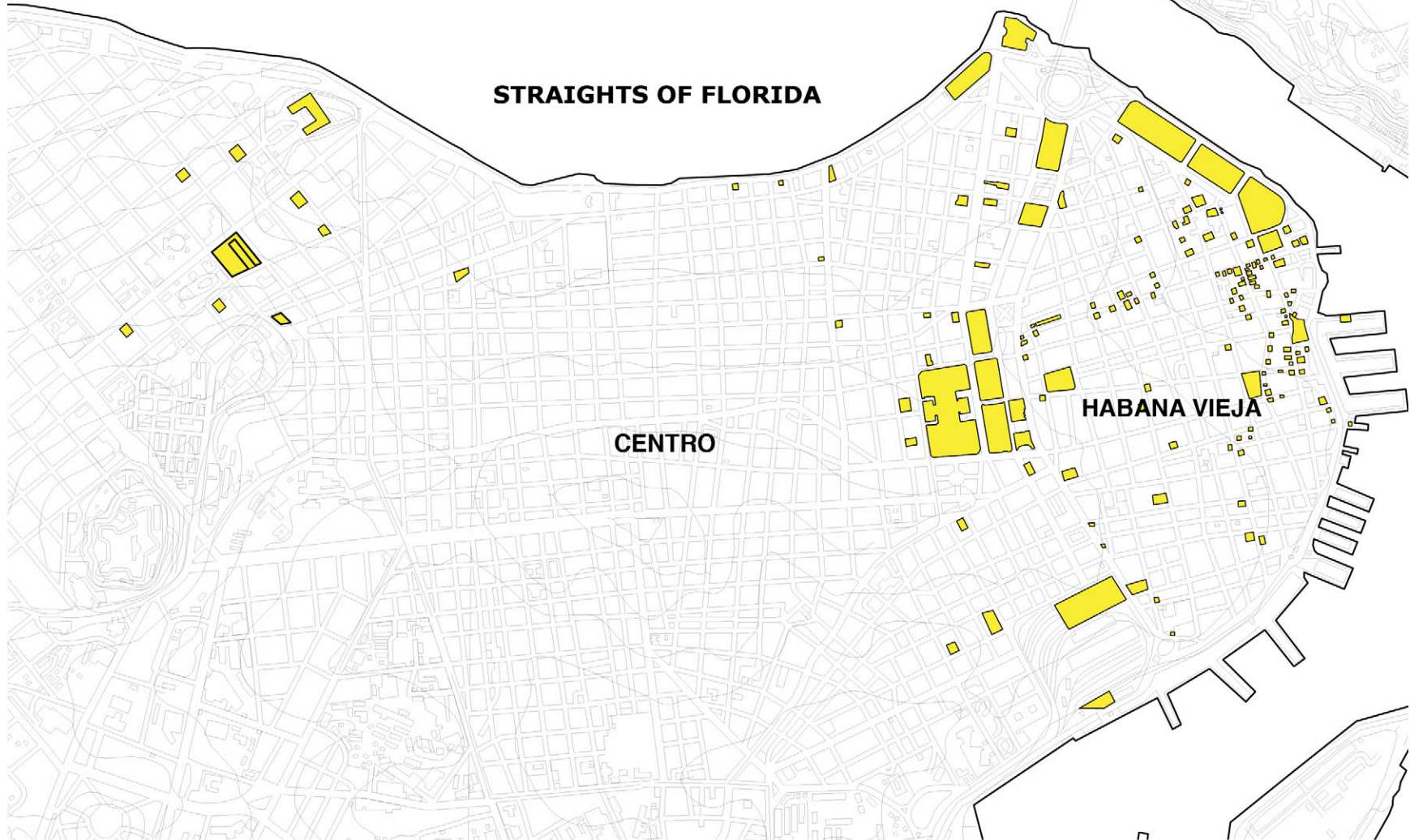
 = Deplorable condition buildings



CENTRO HAVANA, SITES OF DECAY

**CENTRO HAVANA REPRESENTS A HUGE POTENTIAL FOR FUTURE
TOURISM SITES AS WELL AS NEEDED HOUSING SOLUTIONS**

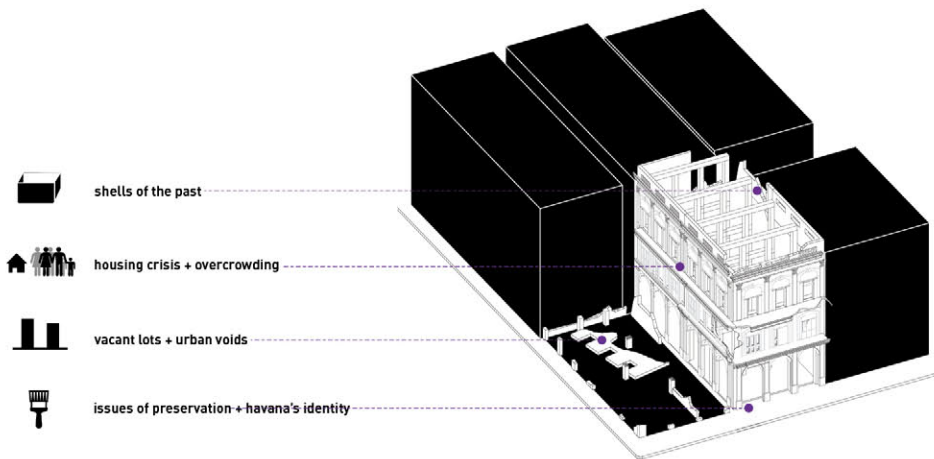
 = Tourist hotels + Attractions





-housing decay, which has lead to Cubanos being forced to live uncomfortably in a overcrowded apartments with multiple generations of family

Havanas buildings stock is in bad condition and currently 60% of the city is in deplorable condition (see figure 4 below). In fact, Centro Habana is the most densely populated but also the least protected. It features similar buildings to Habana Vieja but is not quite as old. The main issue is that Vieja since the 1980's is protected by UNESCO as a World Heritage Site. The connecting neighborhood of Centro sits unprotected and extremely vulnerable to decay. Typical deterioration of the buildings can be categorized in 4 basic conditions, shell and structure, shell only, structure only and empty lot (see figure 3). The degree of these conditions vary greatly in the city and some of the buildings are more and less liveable than others. Many Cubanos blame the embargo and Fidel Castro for the building conditions, but a simple answer to the decay is overcrowding. A serious housing shortage in the country has forced multiple generations of families to share the same space. A building originally designed for 3 families can now hold upwards of 8. When you combine this with the issue that regular Cubanos are unable to afford even general maintenance to their homes, it makes for a serious problem.



CENTRO HABANA

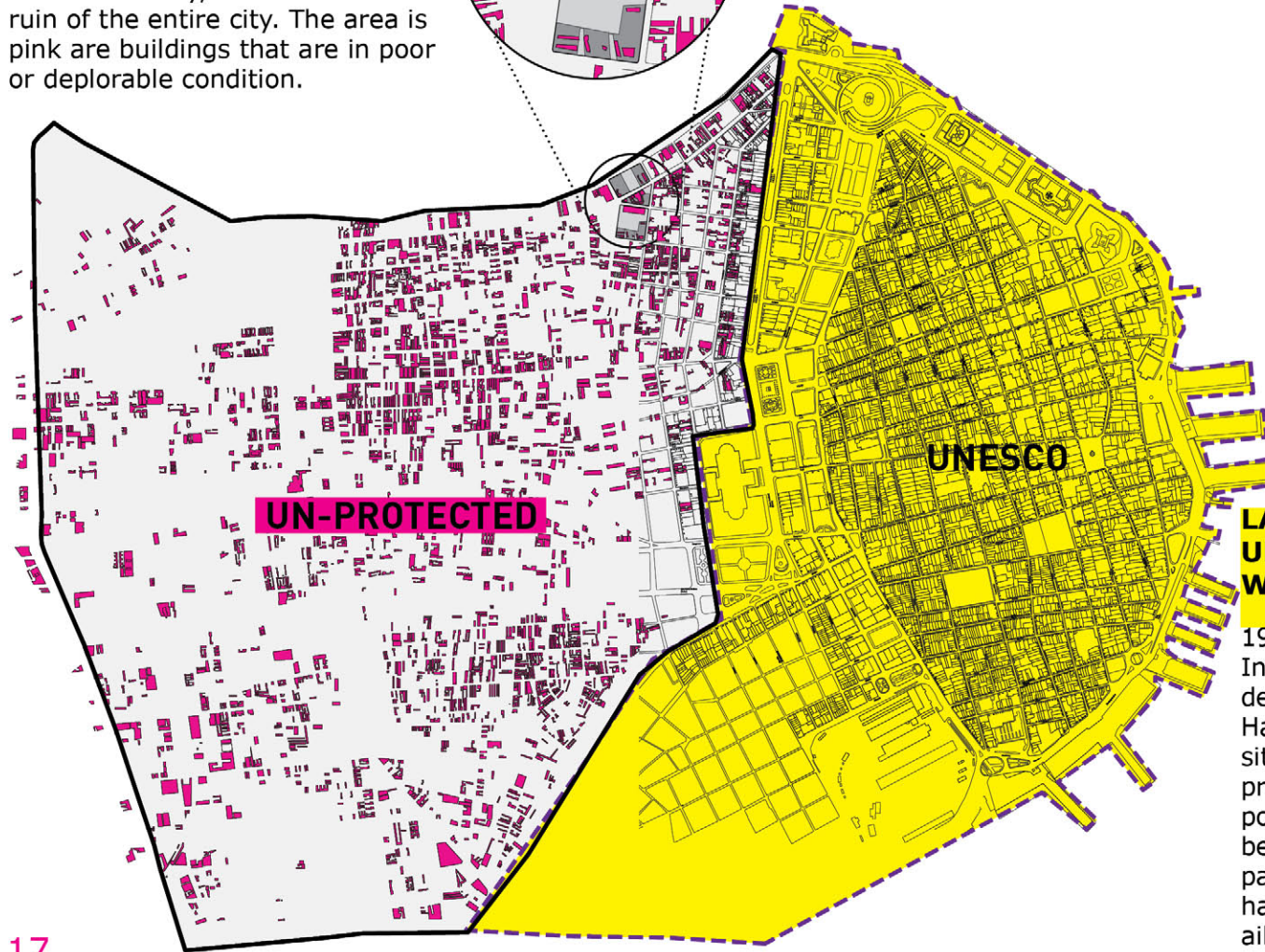
NOW

The area of Centro Habana is not quite as old as Habana Vieja but this area is nearly as architecturally rich. This area has the most decay, deterioration and ruin of the entire city. The area is pink are buildings that are in poor or deplorable condition.



SELECTED SITES IN CENTRO HAVANA TO TEST PROTOTYPES

3x

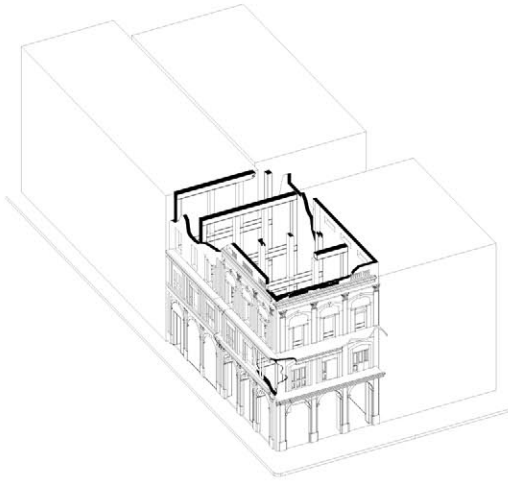


LA HABANA VIEJA UNESCO WORLD HERITAGE SITE

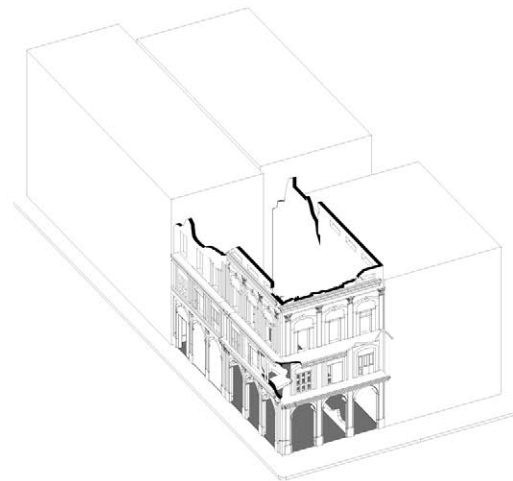
1982

In the year 1982, UNESCO declared La Habana Vieja (Old Havana) a World Heritage site. This automatically made preservation a priority for this portion of Havana. Much has been done in this area and painstaking renovation work has been done to maintain ailing structures and facades.

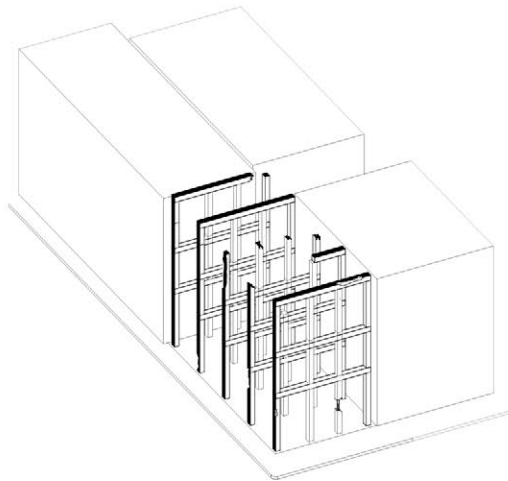
TYPICAL HAVANA BUILDING DECAY



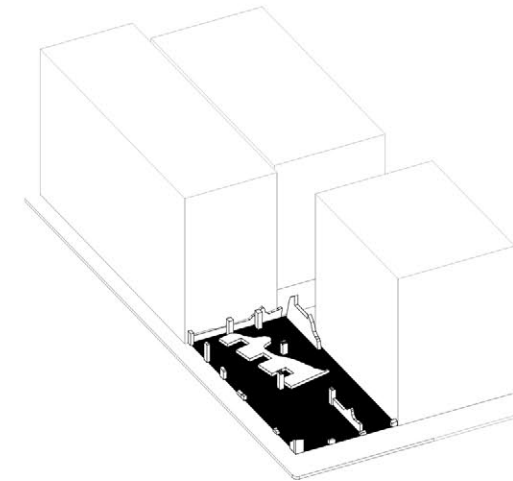
STANDING FACADE + STRUCTURAL BONES



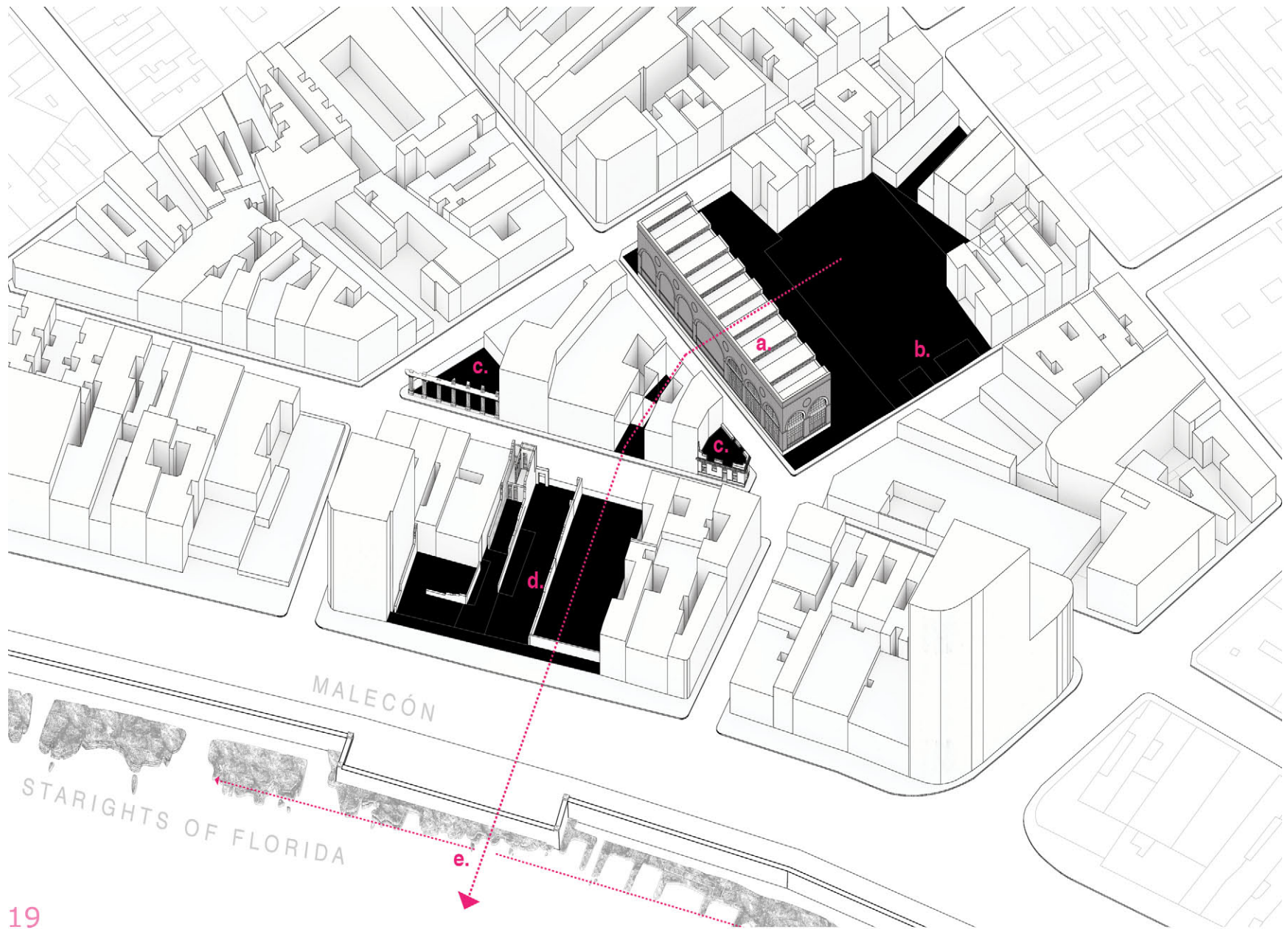
STANDING FACADE ONLY



STANDING STRUCTURE ONLY



DEBRIS + RUBBLE ONLY





SELECTED EXISTING SITES IN CENTRO

a. + b. Bar within a block.

a. Planta Eléctrica is a large shell Ex-Industrial building built in 1901 and ready for a new life.

b. The rest of block is a warehouse shown in white lines. Housing wraps the perimeter



c. Facade on a Corner(s)

The triangular block features two relics of the 19th century, one being a facade only and the other a partial one story structure



d. Void within a Ruin.

Site d. was home to several buildings that have since collapsed and created a modern ruin. The site is located right on the Malecón highway across from the Straights of Florida.



e. Edge without Access

Site e. is the remnants of an old concrete seawall concrete that is inaccessible for the majority of both Cubanos and tourists

A swath of centro Habana has been selected in-order to test ideas of how sites of decay can be transformed. Each of the selected sites represent a different form of ruin or decay that is exhibited all throughout Havana. The sites are located near the Malecón highway across from the Straights of Florida. At both day and night the venerable Malecón becomes a place of escape for both local Cubanos and tourists alike. It stretches for miles along Havana's seaside neighborhoods and is often referred to as 'Centro Havanais front porch.' It offers a great open escape to the overcrowding and extreme density that inhabitants of Centro Havana encounter daily.

The goal of these ad hoc sites is to regenerate them as well as create a datum or path to the powerful Malecón. New access is desired at the ocean and will provide a place for swimming and leisure.

Site a. is early 20th century large brick structure known as Planta Eléctrica. It was used from the 1930's through 1950's as a hub and electrical transfer to Havana's past cable car infrastructure. It now sits as an industrial blight in the primarily housing only zone. Site b. is currently a huge warehouse used by the Cuban government. It sits totally out of scale in relation to its neighbors. The new plan will remove the old warehouse and refill the block with prototypical housing, or casa Particular 2.0 (a type of Cuban B&B).

All of these new prototypes are thought of as possible ways to intervene within the rest of Centro Havana. Place of decay throughout Centro can become the needed housing and tourist accommodation for a Post-Embargo Havana. Site c. is a triangular block which features two relics of the 19th century. The first is a facade only that sits on the east corner facing north. The second western corner was once a 3 story structure that has partially collapsed and left only a 1st floor facade that wraps the corner.

Site d. was home to several buildings that have since collapsed and created a modern ruin. The site is located right on the Malecón highway across from the Straights of Florida. It has left a serious void within northern most block. This series of vacant lots is filled with brick and construction debris.

The final site of decay is site e. and represents a edge without access. This is the coast for Havana and is now just a concrete landscape. Only young agile Cubanos can traverse the seawall to the water. The grade change from the Malecón highway to abandoned seawall below is nearly 4 meters, so moving from one to the other is quite precarious. The Straights of Florida represent an amazing untapped resource for Centro Havana. The ocean is inaccessible for the majority of both Cubanos and tourists.

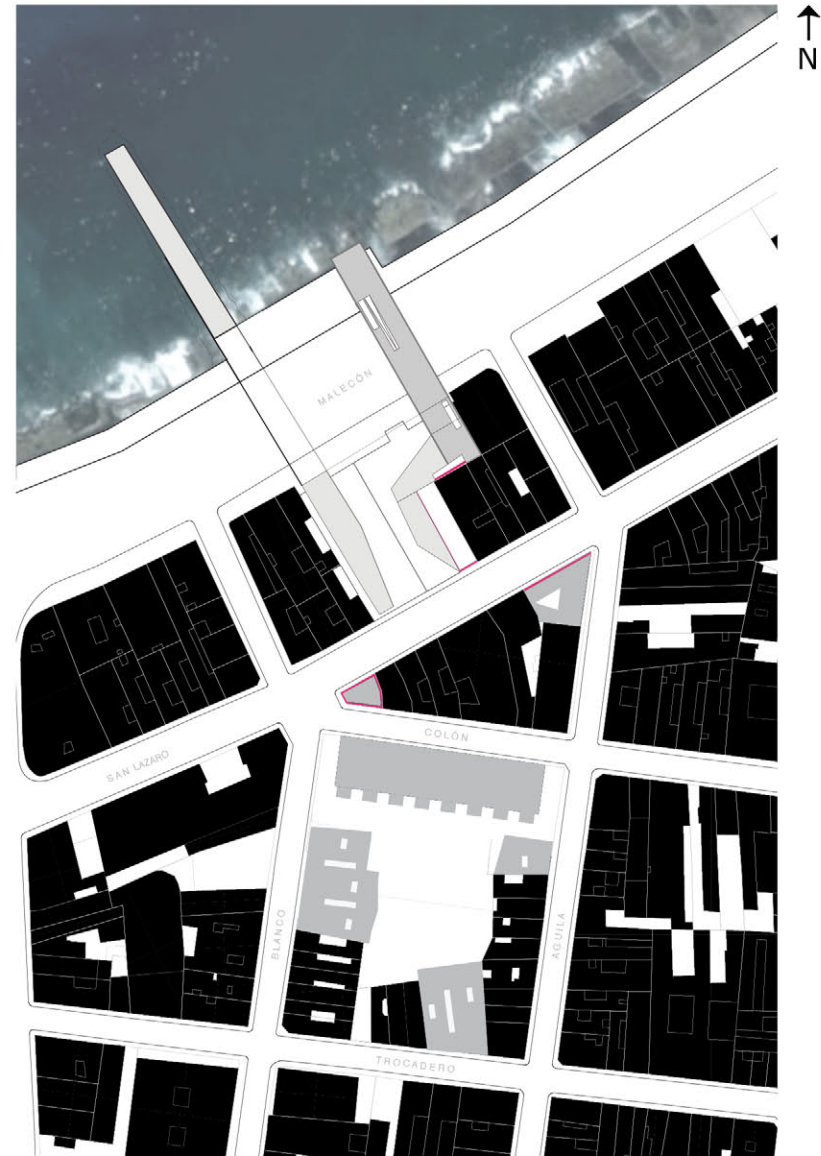


EXISTING SITE FIGURE GROUND



Black is existing buildings on site

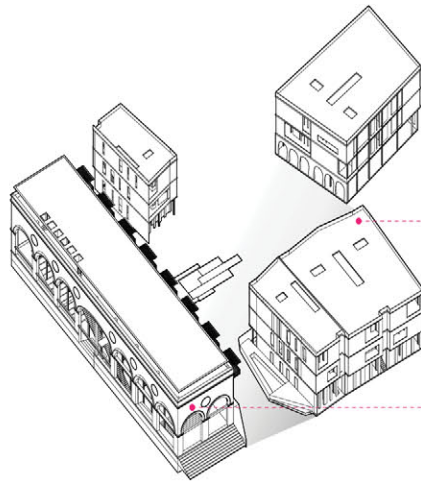
NEW PROPOSED SITE FIGURE GROUND



Grey is new proposed interventions for site

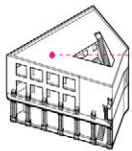


ACCOMMODATION PROTOTYPES (PROPOSED)

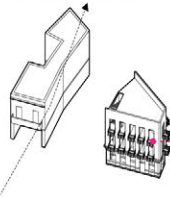


Casa Particular 2.0-
New Housing + Tourist
Accommodation

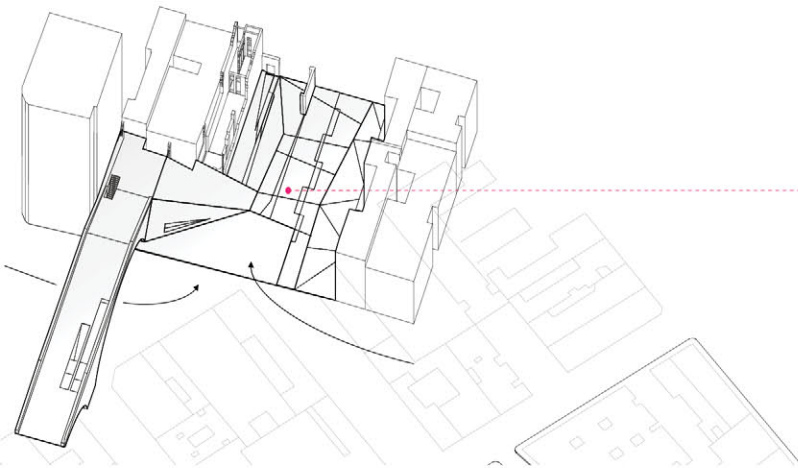
Hotel Planta Eléctrica-
Re-purposing the ex-industrial



Hostel Ruinas-
Shared accommodation in ruins



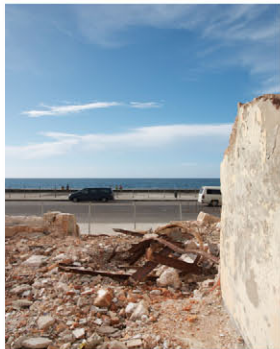
Micro-Hotel Centro-
Compact + Private modules



Malecón Plaza / Bridge / Jetty
A New point of access for both
Cubanos + Tourists



ARCHITECTURAL PALIMPSEST HAVANA MATERIAL DEBRIS	
Natural	
g. MINERAL HAVANA//LIMESTONE// CORAL	
Reuse/Recyclability: HIGH Embodied Energy(MJ/kg): 0.85 Produced: Hecho en Cuba Recycle Method: Reuse (Brick Stack)	
f. TERRAZZO COMPOSITE//MARBLE// QUARTZ//STONE// CONCRETE	
Reuse/Recyclability: LOW Embodied Energy(MJ/kg): 1.4 Produced: Hecho en Cuba (HAV) Recycle Method: Crush for new	
e. WOOD 2x4//TRIM//MOLDING// CEDAR//MAHOGANY	
Reuse/Recyclability: MEDIUM Embodied Energy(MJ/kg): 10.0 Produced: Hecho en Cuba (HAV) Recycle Method: Reuse, Plane	
d. METAL W FLANGE BEAM// COLUMN// PLUMBING	
Reuse/Recyclability: MEDIUM Embodied Energy(MJ/kg): 20.1 Produced: Hecho en Cuba + Imported Recycle Method: Reuse(Lentil / light structure)	
c. TILE TERRACOTTA ROOF// SPANISH FLOOR// PORCELAIN GLAZED	
Reuse/Recyclability: LOW Embodied Energy(MJ/kg): 6.5 Produced: Hecho en Cuba + Imported Recycle Method: Repurpose (Facade Infill)	
b. BRICK RED CLAY//HOLLOW CORE// PORCELAIN GLAZED	
Reuse/Recyclability: MEDIUM Embodied Energy(MJ/kg): 3.0 Produced: Hecho en Cuba (HAV) Recycle Method: Reuse (Infill Walls/ Roostack)	
a. CONCRETE CMU//FOUNDATION// STRUCTURE	
Recyclability: HIGH Embodied Energy(MJ/kg): 0.67cmu/1.11 Produced: Hecho en Cuba (HAV) Recycle Method: Crush for new concrete	
*ORNAMENT COLUMN//BALUSTER	
Reuse/Recyclability: LOW Embodied Energy(MJ/kg): varies Produced: Hecho en Cuba (HAV) Recycle Method: varies	
Synthetic	



DEBRIS / REUSE / RECYCLE

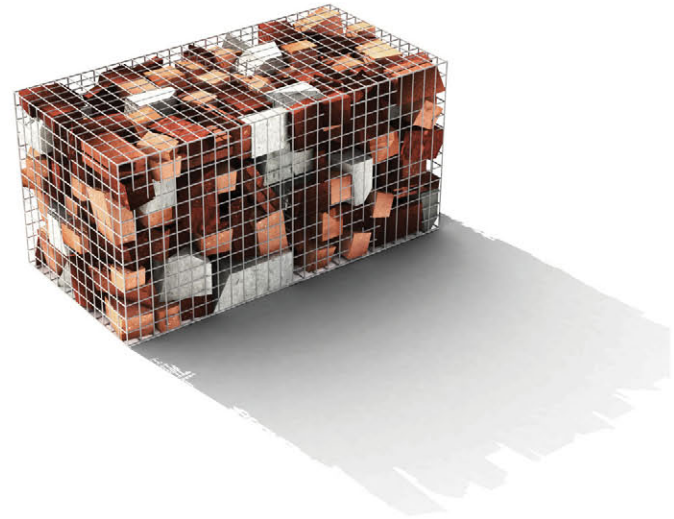


Being that a potential building boom could happen on the island after the embargo is finished, building materials should be carefully considered. The decay of existing buildings has led to countless piles of debris throughout the city (see site material sample on page 26). Materials from stone, wood, steel, concrete and brick are seen everywhere. The most abundant of these materials is perhaps clay brick. Most of the Havana building stock is composed of stacked brick walls approximately 18" deep. When old buildings collapse the remaining material is primarily brick from the structural masonry walls. New construction will also obviously have to favor modern technology such as steel and concrete structures, but the debris should also be considered. One method could be to reuse clay brick and tile for facades and screening elements.

Just recently the Pritzker Prize winning Chinese architect, Wang Shu utilized a whole villages old brick supply for a new structure. Nearly 3.7 million bricks were recycled for the Ningbo Museum of Art in China. The use of recycled building materials instantly give the building a character and historical meaning which many new buildings in China often lack. This type of reverence for the past would work very well in a city as historic and full of character as Havana.

Precedents: Wang Shu, Ningbo Art Museum, Ningbo, China.
Herzog and de Meuron, 1111 Lincoln Road, Miami, Florida.

1. BRICK SCREEN WALL (NON-STRUCTURAL)



2. DEBRIS GABION WALL (STRUCTURAL)





Given the climatic needs in the tropical zone, this idea of reuse could even go further than just cladding a building. Brick debris in Havana often range in sizes and shapes. This could be an excellent opportunity to use parametric computer software to find ways to reassemble the bricks for use in non-structural screen walls. These systems would allow new buildings in Havana to have personality and life while performing and being a better fit in the urban context.

Besides screening systems, new ways of collecting and clustering construction debris produces new outcomes. Gabion wall systems typically collect raw stone and create an organized structural system for retaining walls. This same logic can be applied to recycling construction debris. This system could be used in Havana for light infrastructure as well as public park spaces. A shallow gabion wall cage could even allow for interior privacy walls and room dividers.

Brick debris could also be used to create new surface and paver type systems instead of pouring concrete. The bricks could allow for a much more porous ground condition that works better with the natural environment.

Besides recycling materials, new localized masonry production could be increased to offset the need for imported materials. Post-Embargo will bring a flood of cheap American construction materials. This could be both good and bad for Cuba.

LOCALIZED MASONRY PRODUCTION, HECHO EN CUBA

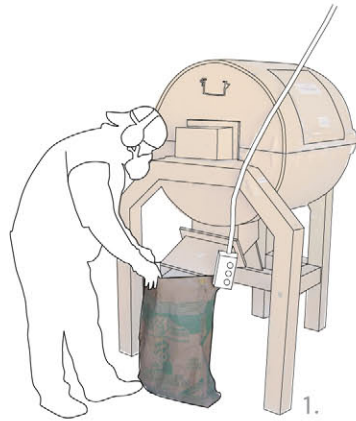


Men making Lime-pozzolana cement (CP-40) from local aggregates



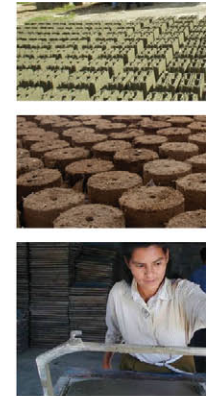
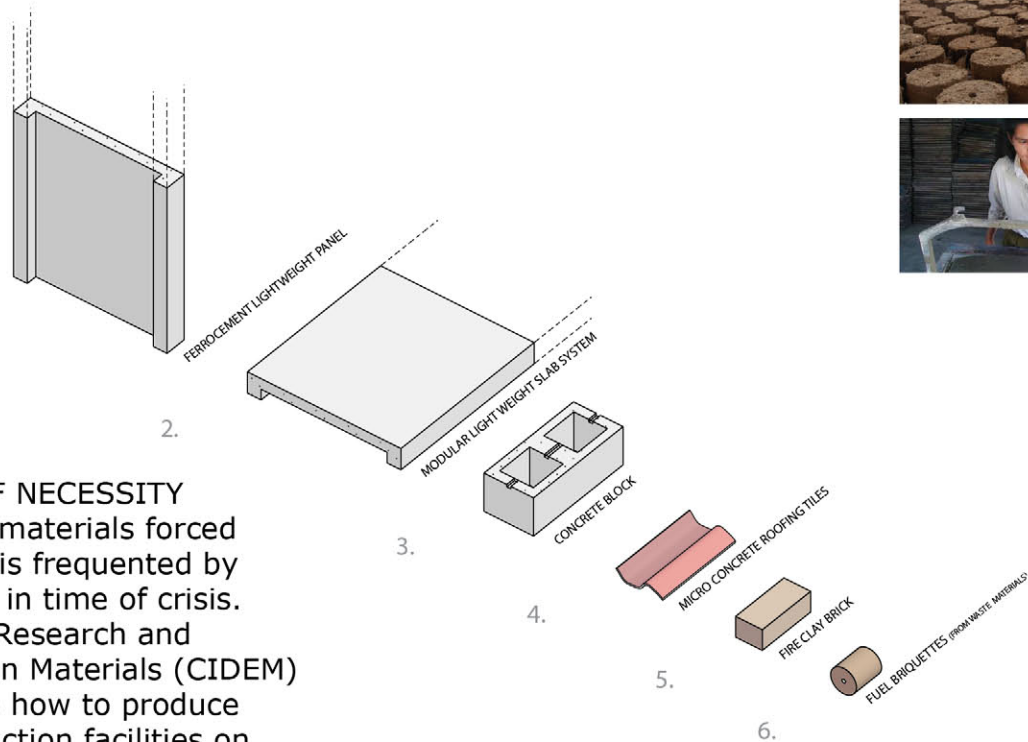
MASONRY
+
STONE

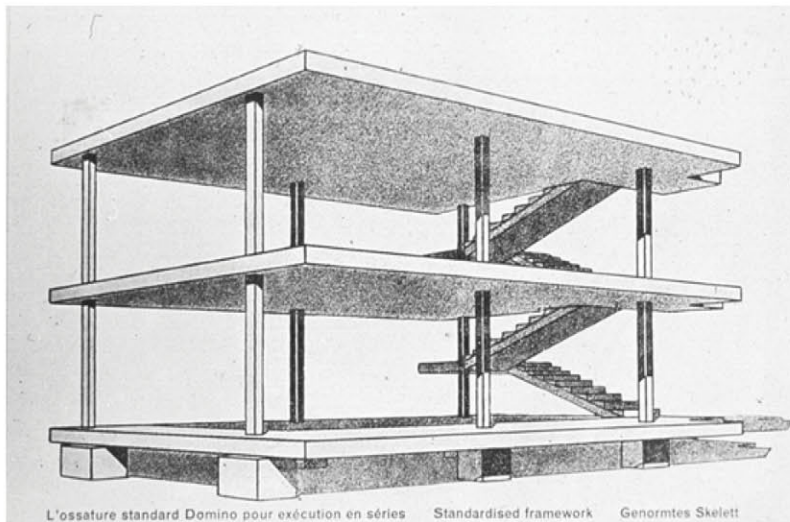
COMMUNITY PRODUCTION OF BUILDING MATERIALS



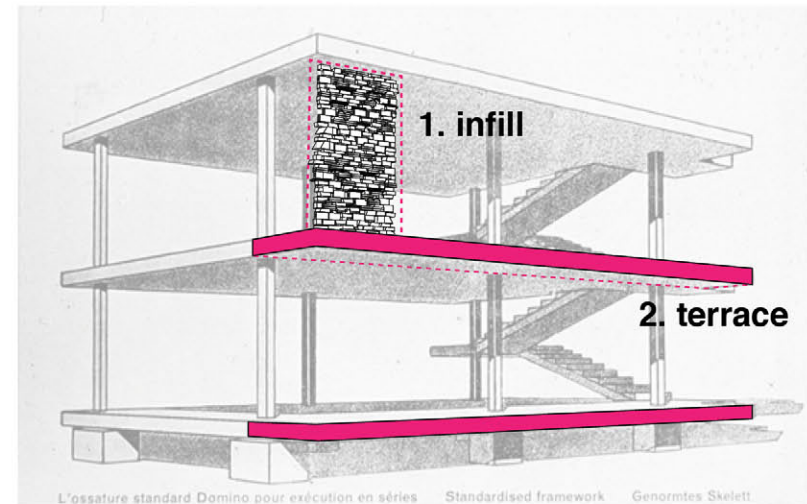
ECO-MATERIALS

SMALL SCALE LOCAL PRODUCTION OUT OF NECESSITY
Both Natural disaster and lack of imported materials forced Cuba to localize material production. Cuba is frequented by Hurricanes and materials become essential in time of crisis. Often times groups such as the Centre for Research and Development of Structures and Construction Materials (CIDEM) come into a town and begin teaching locals how to produce building materials. They set up small production facilities on site and begin working.



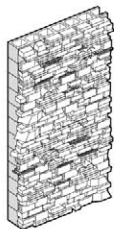


Le Corbusier, Casa Domino Diagram. The Domino House came from war torn France after WWI. The basic idea was to create a structure of column and slab and infill rubble and debris that was readily available.

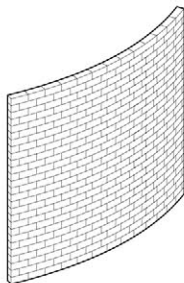
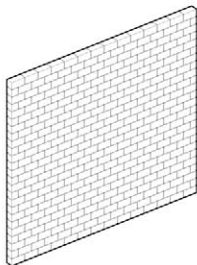


Le Corbusier, Casa Domino Diagram can be translated into modern day Havana. Ideas of infill walls create inside and outside spaces via terraces.

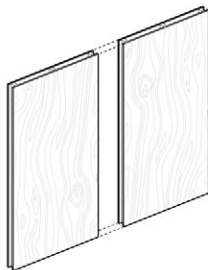
INFILL WALL ASSEMBLIES



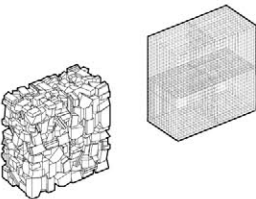
BRICK DEBRIS RAINSCREEN
2/ CMU
REUSE



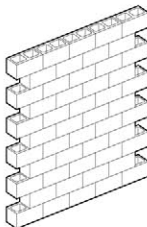
BRICK WALL, STRAIGHT + CURVE
NEW + REUSE



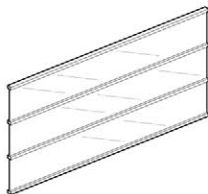
PLYWOOD, GYPSUM BOARD
NEW



GABION WALL W/ DEBRIS

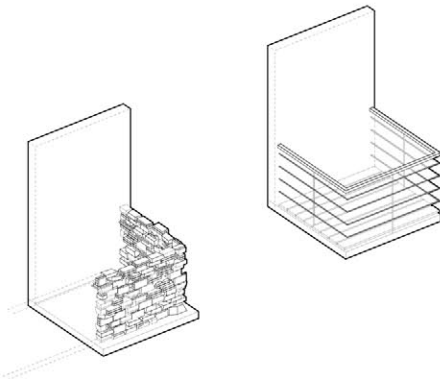


CMU WALL



STOREFRONT / GLAZING

BALCONY ASSEMBLIES

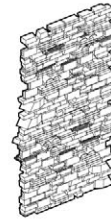


The typical building technologies in Cuba use basic masonry techniques such as CMU and brick. But, because of the excess amount of old building materials, Havana has the opportunity to capitalize on this found material. By allowing for a column and slab structural infrastructure, housing can then use basic infill wall systems. A kit of parts catalogue has been created and consists of infill wall, screen and balcony assemblies. The wall assemblies include brick debris rain screens, new local brick, gypsum / plywood panels, CMU and glazing.

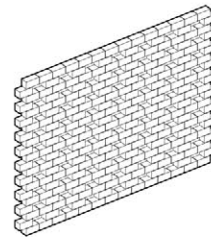
The infill screen assemblies use the brick debris screen walls which are created by stacking brick shards in a semi structural method. The level of porosity can be controlled by how dense or less dense the bricks are clustered. Construction debris can also be collected and stored in shallow gabion structures which act as structural components and filter light. New brick can be stacked and arranged both on the exterior and interior as separation and privacy. Basic steel cable is utilized into a grid to shade as well as act as a place to dry clothes on terraces.

Two basic brick systems could work quite well in Havana. The first system uses the column and slab structurally system with infill walls that rest on the floor plates. This system breaks up the overall scale and reveals the construction logic. The second system works by hanging the wall systems from the structural components. This system allows for a more monolithic appearance.

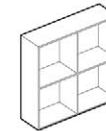
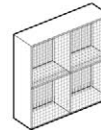
INFILL SCREEN ASSEMBLIES



BRICK DEBRIS SCREEN WALL
REUSE



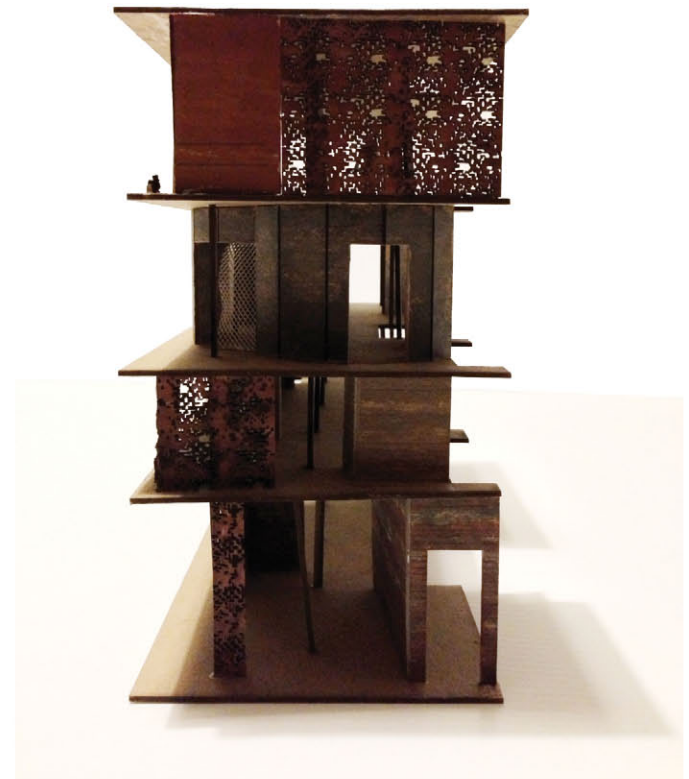
BRICK SCREEN WALL
NEW + REUSE



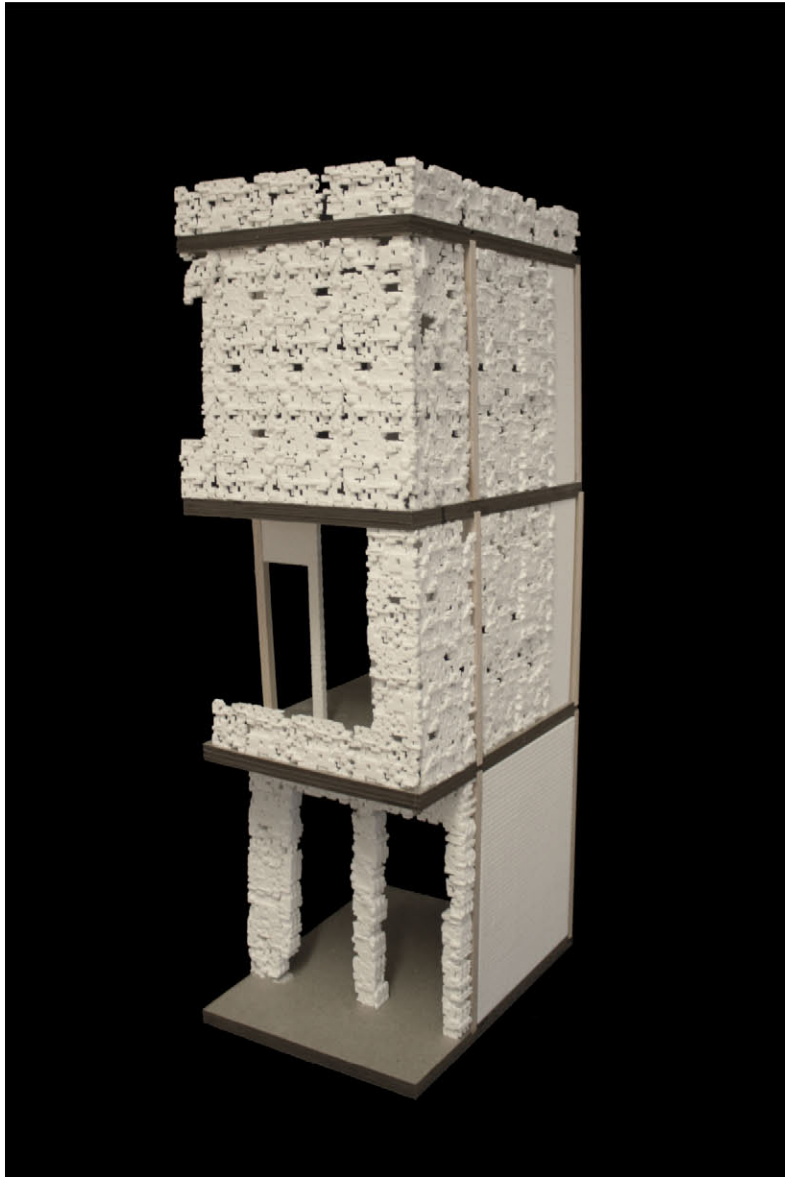
GABION WALL W/ DEBRIS



METAL MESH SCREEN / STEEL CABLE
LAUNDRY RACK



Early Study Model testing infill wall assemblies into column and slab structural system





2. Hung Type, $3/8''=1'$ Model, showing hung brick debris screen system

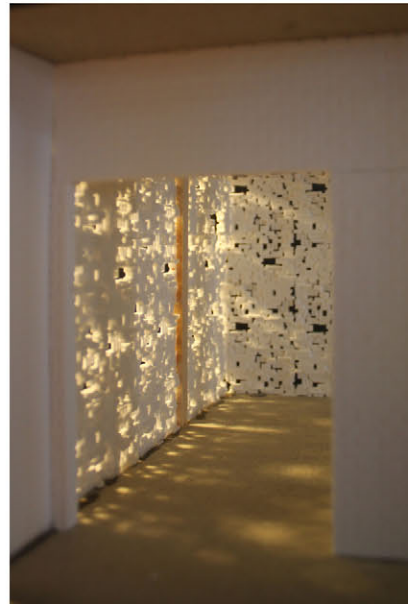


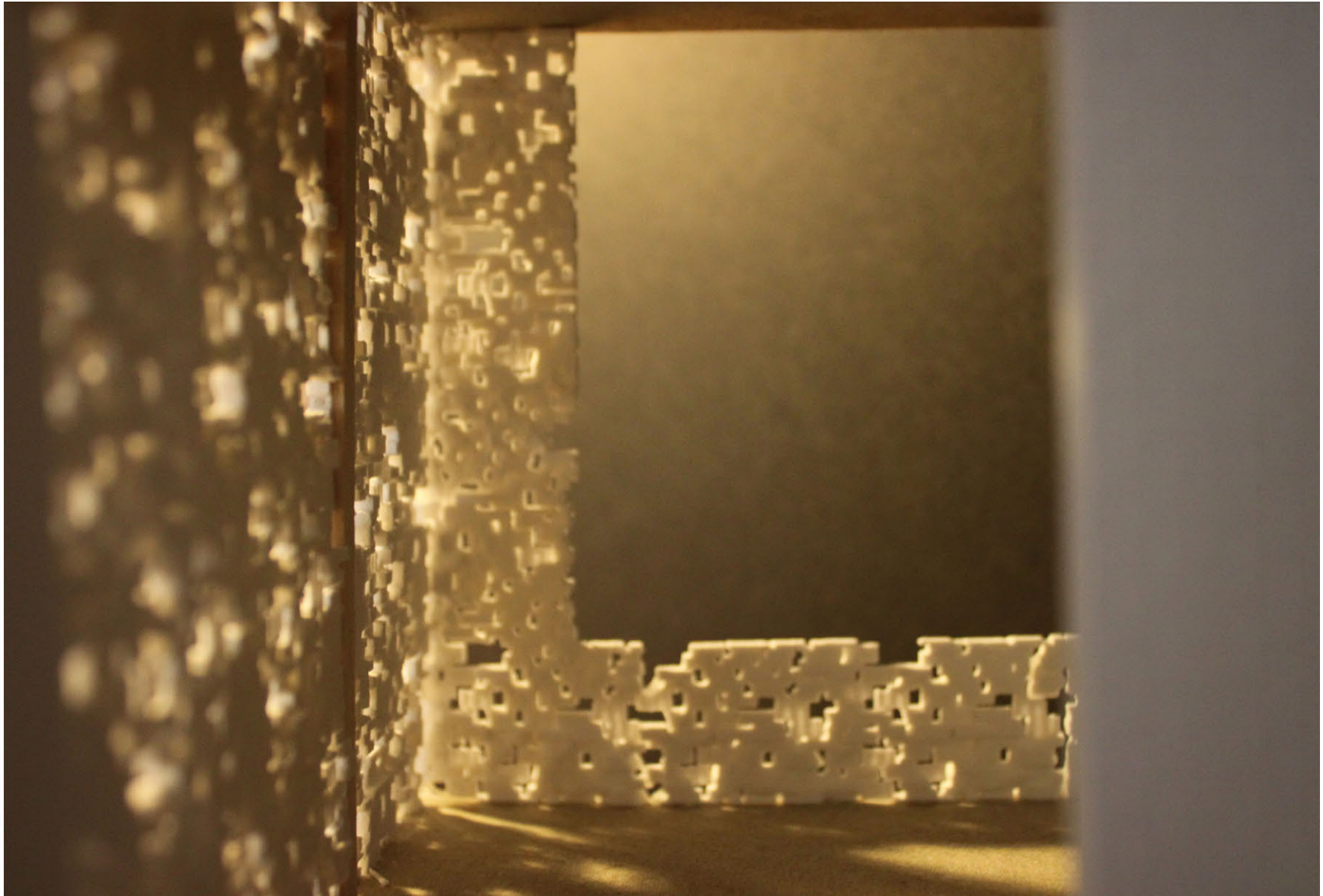
37

$3/8''=1'$ Model, showing brick debris infill wall system




3/8"=1' Model, showing hung brick debris screen system






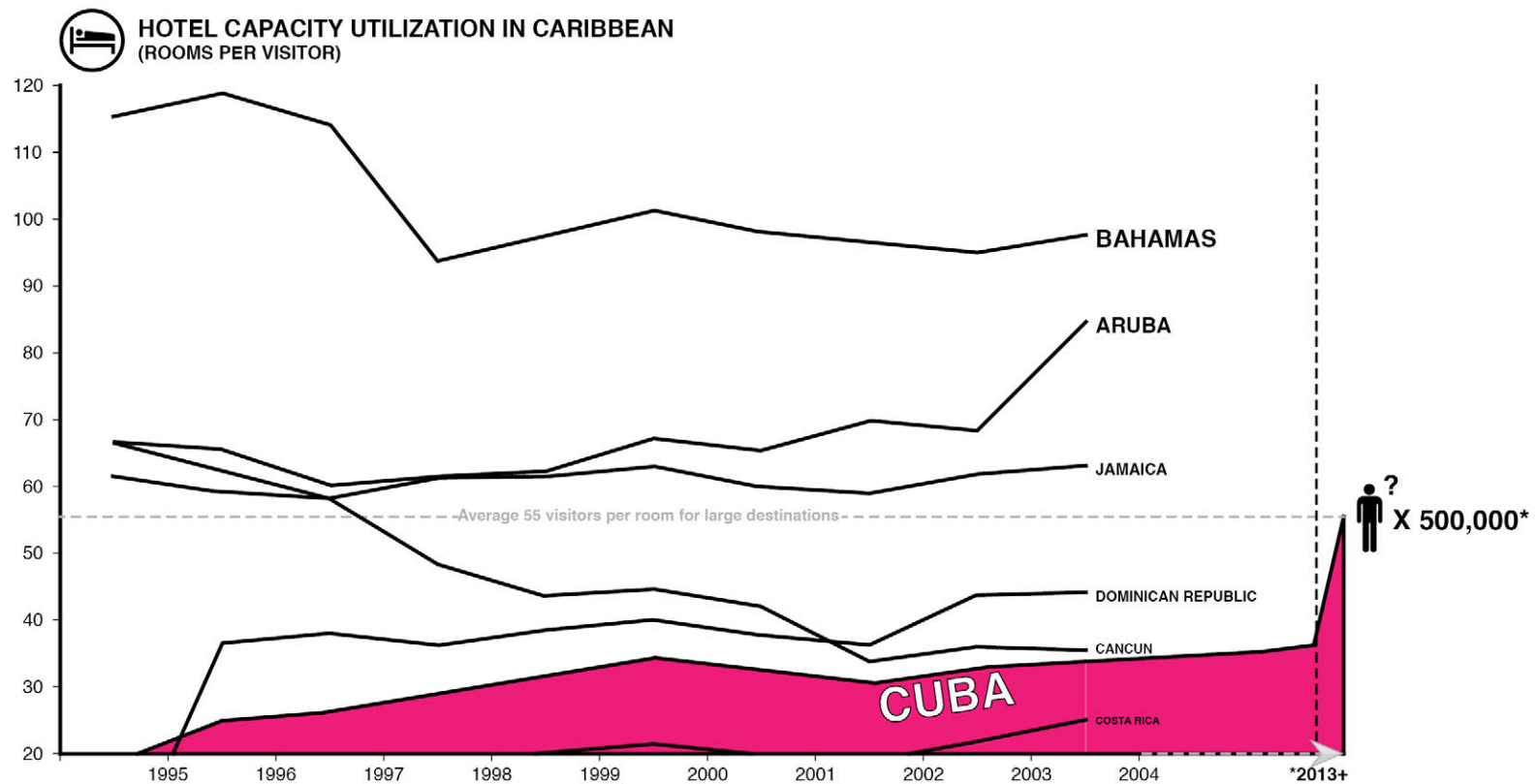
Interior Model Study, inside terrace with brick debris screen infill walls

PROJECTED DEMAND

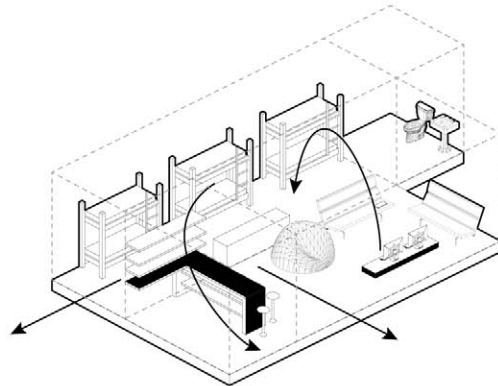
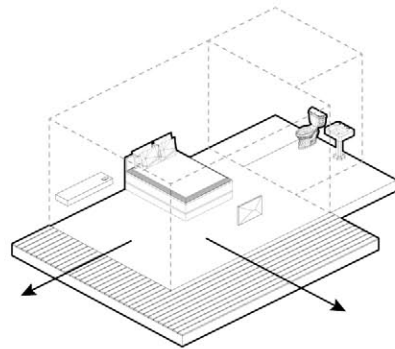
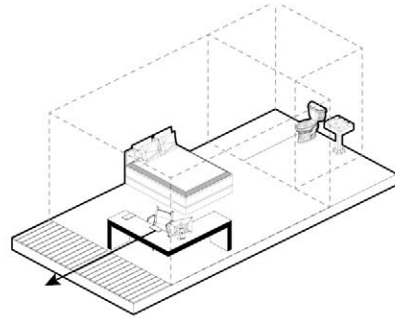
 **X 3.6 MILLION TOURISTS**

 **X 10,000 NEW ROOMS**

3.6 MILLION ANNUAL PROJECTED VISITORS
WOULD REQUIRE ROUGHLY 10,000 NEW
HOTEL ROOMS IN CUBA



*open travel for U.S.. tourists to Cuba, if Cuba reached the regional 55 visitor/ room they could effectively double the amount of current visitors, still leaving a demand of 500,000 tourists



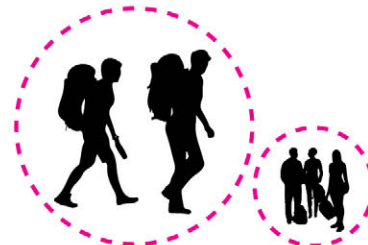
It is projected the Post-Embargo future of Cuba will once again be dominated by a U.S. presence. Currently U.S. Citizens make up 60-70% of all Caribbean visitors. But, in Cuba it is less than 5% of annual arrivals. When the travel ban is lifted Americans will take over Canadians as the highest ranking annual visitor. By around 5 years after embargo, is ended Americans will reclaim their crown as highest visitor group to Cuba, close to the 60% share seen in other Caribbean destinations.

Cuba ranks quite low in hotel capacity utilization compared to other Caribbean countries. Cuba has around 33 rooms per visitor compared to the Bahamas which is closer to 70. The Caribbean average is 55 rooms per visitor which mean Cuba has a ways to go to meet future demand. At 3.6 million annual visitors, including American influx Post-Embargo, Cuba would need to add approximately 10,000 more rooms. Havana would need around 6,000 of those rooms alone.

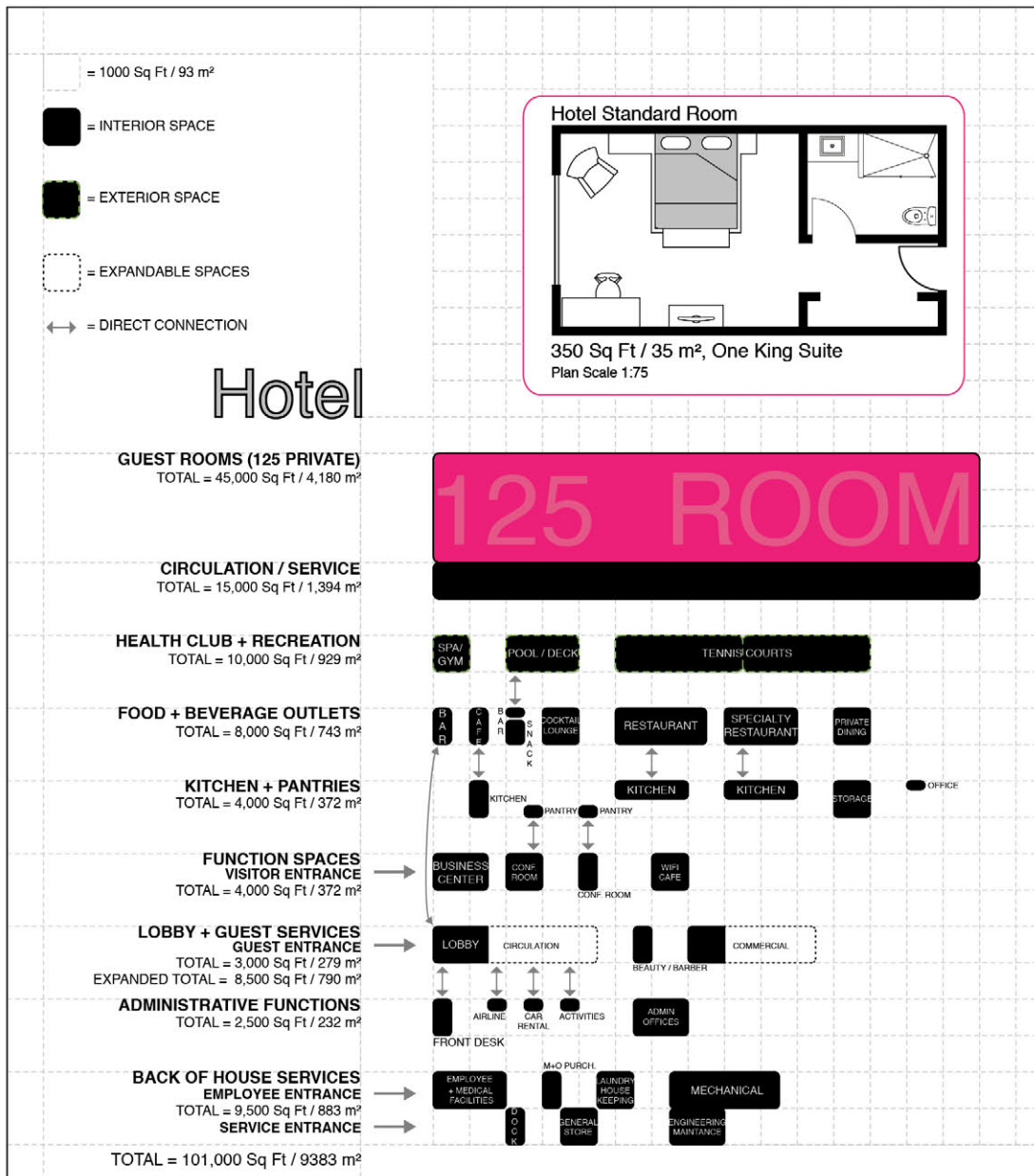
Havana has 2 main types of tourist accommodation. The standard hotel and the casa particular, a type of Cuban B&B. New typologies could work well in this context. The European style hostel would be perfect for a new flood of American backpackers. Another interesting new typology would be a micro-hotel. This concept would pack everything a traveler would need into one private package.









FUTURE AMERICAN TOURIST PROFILE



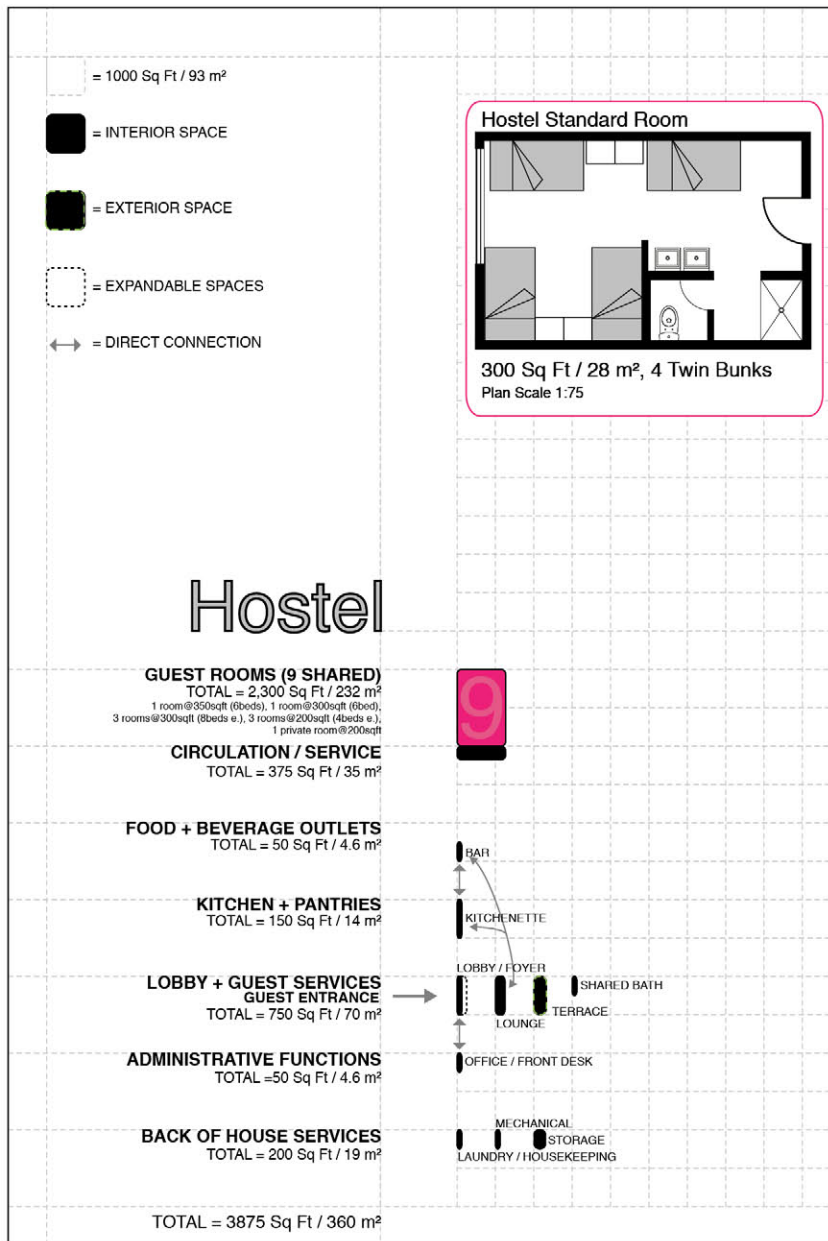
U.S. VISITOR	Baby Boomer	Backpacker + Study Abroad Student	Business Person
Needs	COMFORT PRIVACY CLIMATE CONTROL PLENTY OF SPACE	BED SEMI PRIVACY SOCIALIZING LOCKERS WIFI	WORK ZONE MEETING AREA WIFI
RoomType	private / semi-private	shared / private	private
% of U.S. Population	70% by 2040 (67 million in 08')	varies	varies
Generation	gen X	gen Y 'Millennial'	varies
Shared Space Acceptability	Minimal	Maximum	Minimal to None



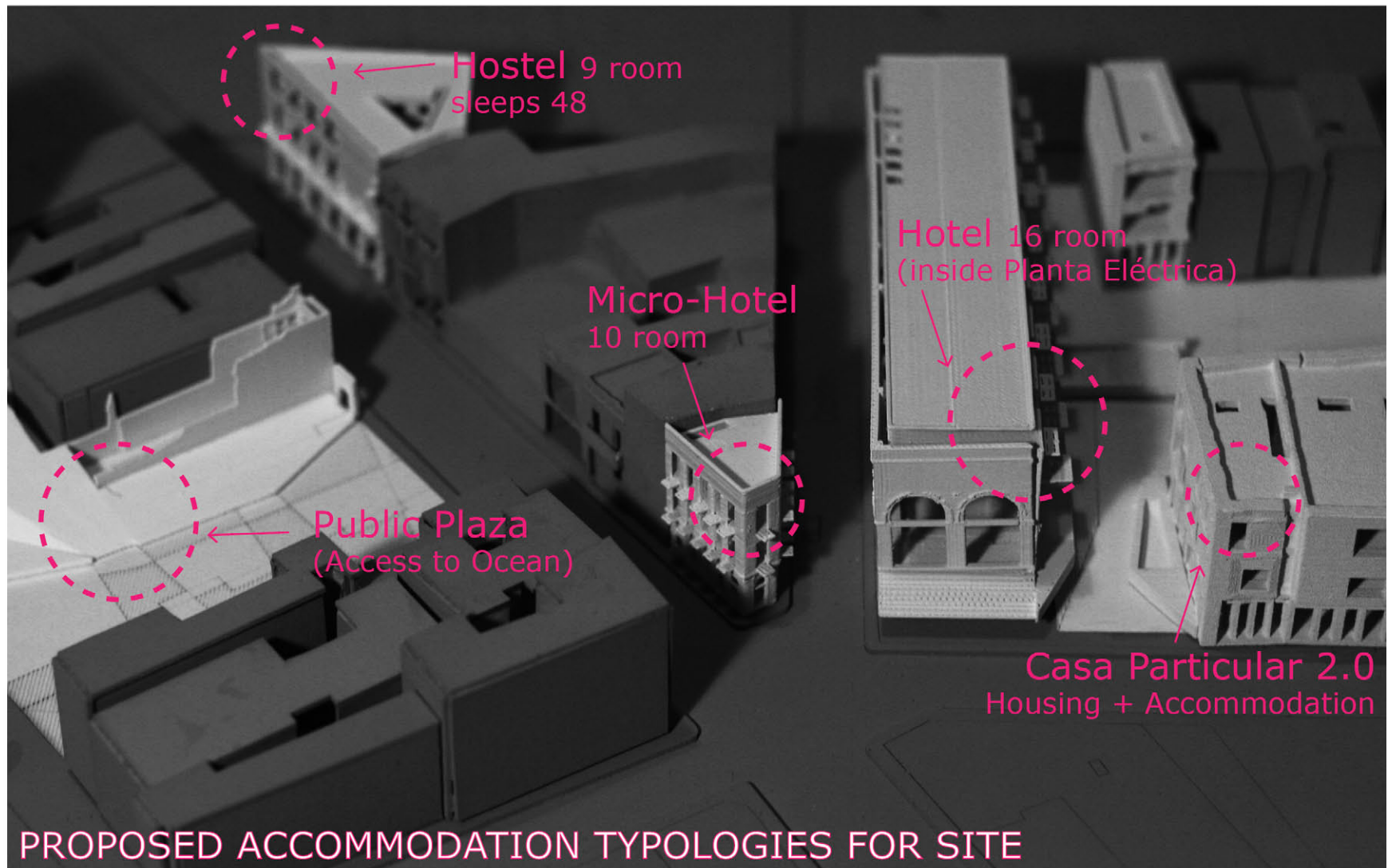
Large Hotels in Havana, often run by either Foreign enterprises such as the Melia Group, Spain, or the Government run Habaguanex Co. Diagram: (left) typical 125 room hotel amenities

HOTEL (HAVANA)	# OF ROOMS	RATING	AMENITIES	LOCATION	
 BEAUVILLE 1956 (BV BELLEVUE HOTELS, SPAIN)	144	★★★	OCEAN + CITY VIEW / POOL / BAR	CENTRO a.	
 PARQUE CENTRAL 96/10 (IBEROSTAR, SPAIN)	427 27 s / 34 j / 362 1 p / 3 dis	★★★★★	CITY VIEW / POOL (2) / BAR (3) / BUSINESS CENTER (10 ROOMS) / RESTAURANT (2) / FITNESS CENTER	VIEJA b.	
 SEVILLA 1908 (ACCOR HOTELS, FRANCE) (FORMALLY BILTMORE)	178	★★★★	CITY VIEW / POOL / BAR (2) / BUSINESS AREA / RESTAURANT / FITNESS CENTER / SHOP	VIEJA c.	
 MELIÁ COHIBA 1994 (MELIÁ GROUP, SPAIN)	462 60 s / 39 j / 342 / 21 dis	★★★★★	CITY VIEW + OCEAN VIEW / POOL / BAR (2) / BUSINESS CENTER / RESTAURANT (3) / FITNESS CENTER / SHOPPING CENTER	VEDADO d.	
 TERRAL 2011 (HABAGUANEX, CUBAN STATE)	14 2 j / 12	★★★★★	OCEAN VIEW (ALL ROOMS) / BAR / CAFE	CENTRO e.	
 HABANA LIBRE 1958 (MELIÁ GROUP, SPAIN) (FORMALLY HILTON)	572 37 j / 532 / 1 p / 2 dis	★★★	CITY VIEW + OCEAN VIEW / POOL / BAR (2) / BUSINESS CENTER / RESTAURANT (3) / FITNESS CENTER / SHOPPING CENTER	VEDADO f.	

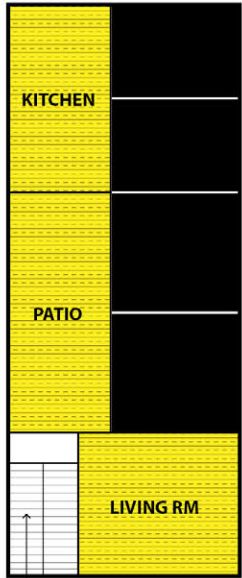




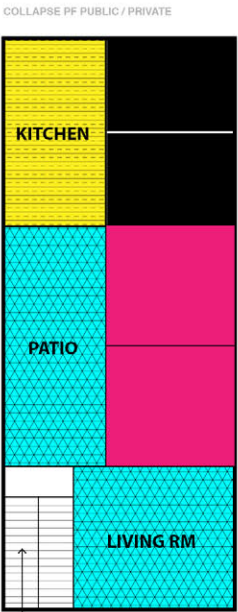
Hostel La Buena Vida by ARCO
 Arquitectura Contemporánea
 Architects, Mexico City, Mexico
 (left images) Czech Inn, Prague,
 Czech Republic (right images)



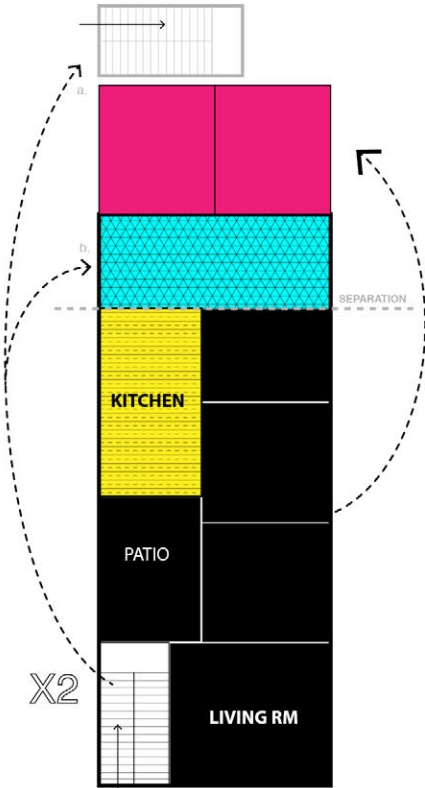
RESIDENT / VISITOR SPATIAL RELATIONSHIPS



TYPICAL HAVANA APARTMENT
RESIDENT ONLY



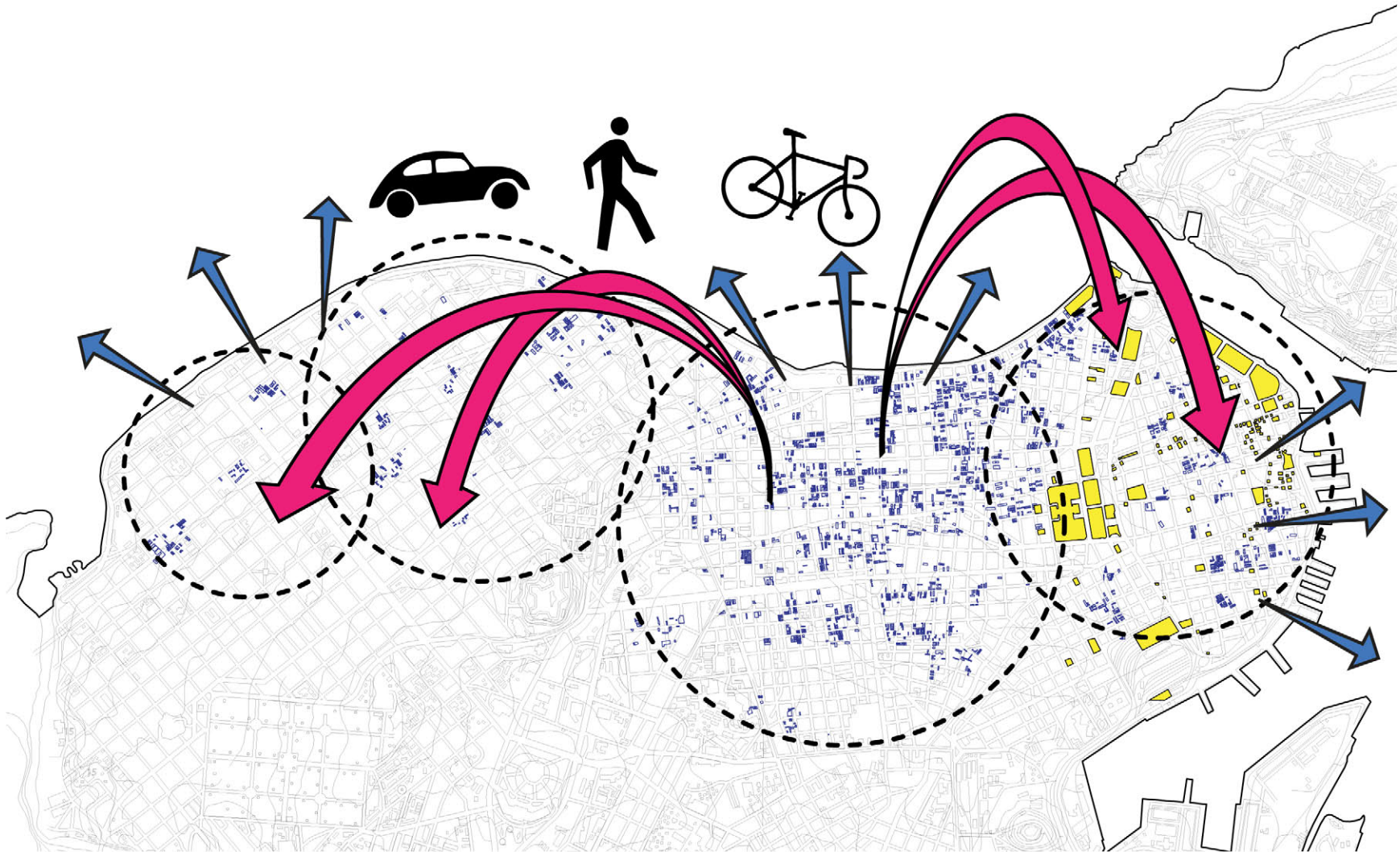
CASA PARTICULAR
ISSUE 1: LOSS OF PRIVACY / SPACE
ISSUE 2: SECURITY CONCERNS



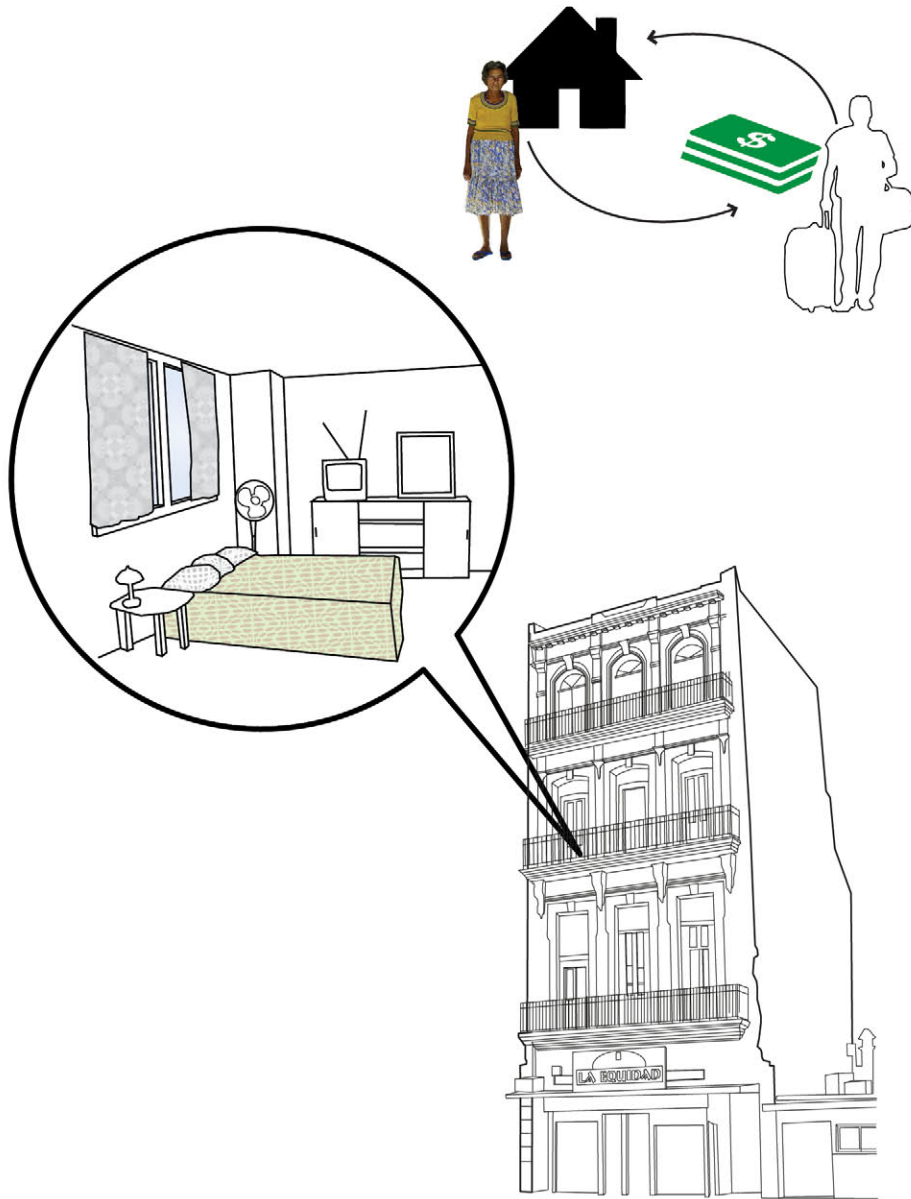
PROPOSED RESIDENT / VISITOR
RELATIONSHIP
SEPARATION AND ADDED SPACE
PRIVATE CIRCULATION OPT a. or b.



1. CASA PARTICULARES (HOUSE/HOTEL)



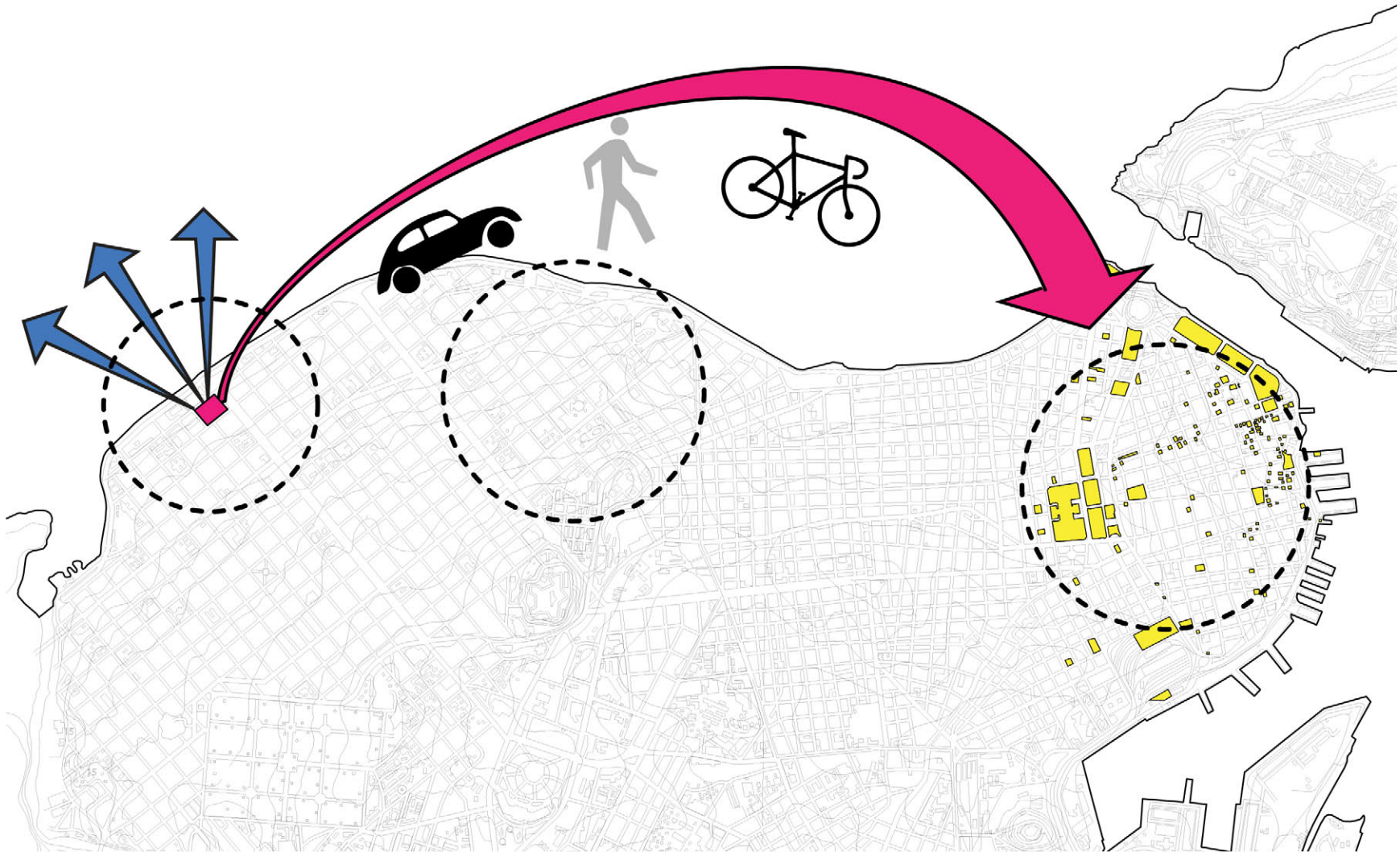
Regular Cubanos Host Tourists 1997 CASA PARTICULAR (Cuban Style B&B)



Before the "Special Period" the government attempted to segregate Cubanos and tourists, also known as "tourism apartheid." After the collapse of the U.S.S.R in 1991 everything changed. Because of tourism influx in the early 2000's, Fidel reluctantly allowed normal Cubanos to open up their homes to guests in a program know as 'casa particulares.' This Cuban style bed and breakfast was one of the first times Cubanos could directly benefit from tourists. 'Casa particulares' can be found all over Havana including Centro. They have quickly become the budget way to stay in the city and are often most popular with backpackers and those looking for a more authentic Cuban experience.

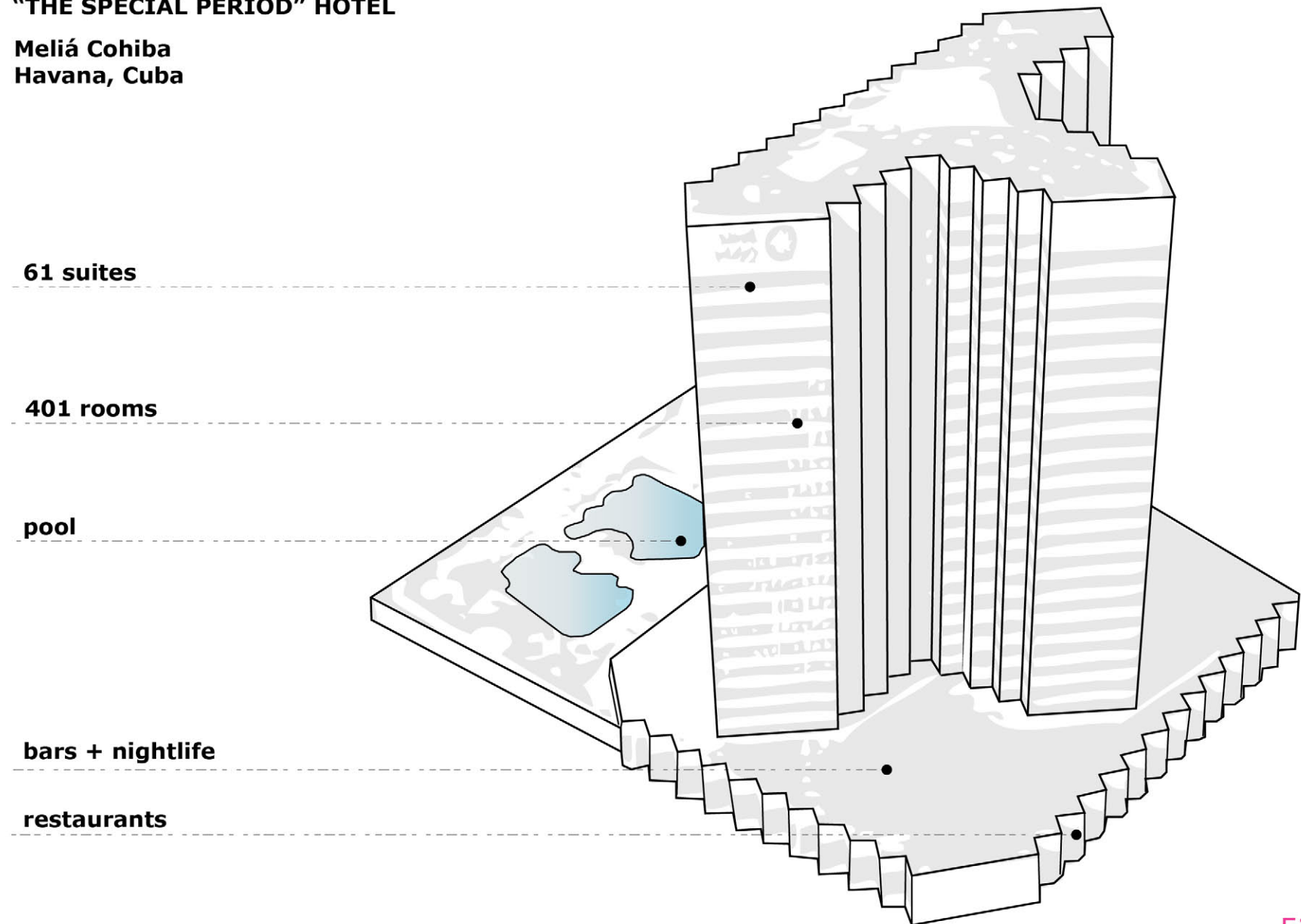
Another typology is the more standard hotel. Many hotels built during the "Special Period" are ecologically irresponsible. Like many hotels built through foreign investment the Meliá uses materials and construction methods not suitable for the Cuban climate. The 22-floor Meliá looms over the Vedado neighborhood built in the 1950's. Like many other hotels built with both local and foreign investment, the architecture is typically non-sensitive to the Cuban context and tropical climate. Hotels such as the Meliá Cohiba feature curtain wall glazing systems with no consideration for orientation and shading devices.

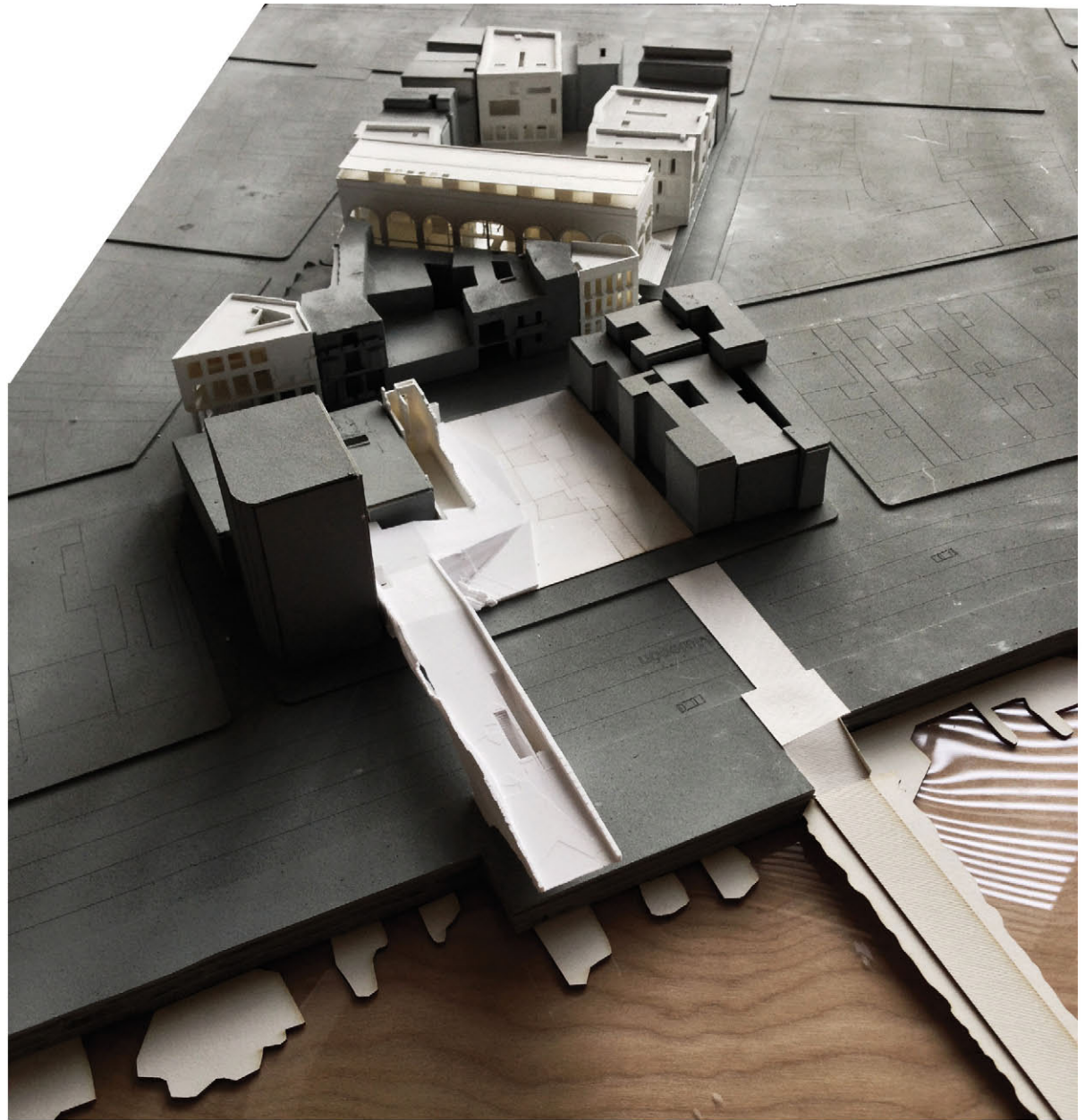
2. MEGA HOTELS



"THE SPECIAL PERIOD" HOTEL

Meliá Cohiba
Havana, Cuba



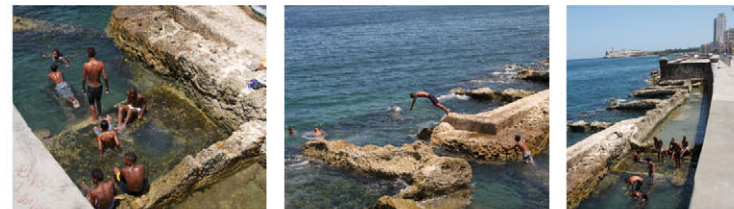


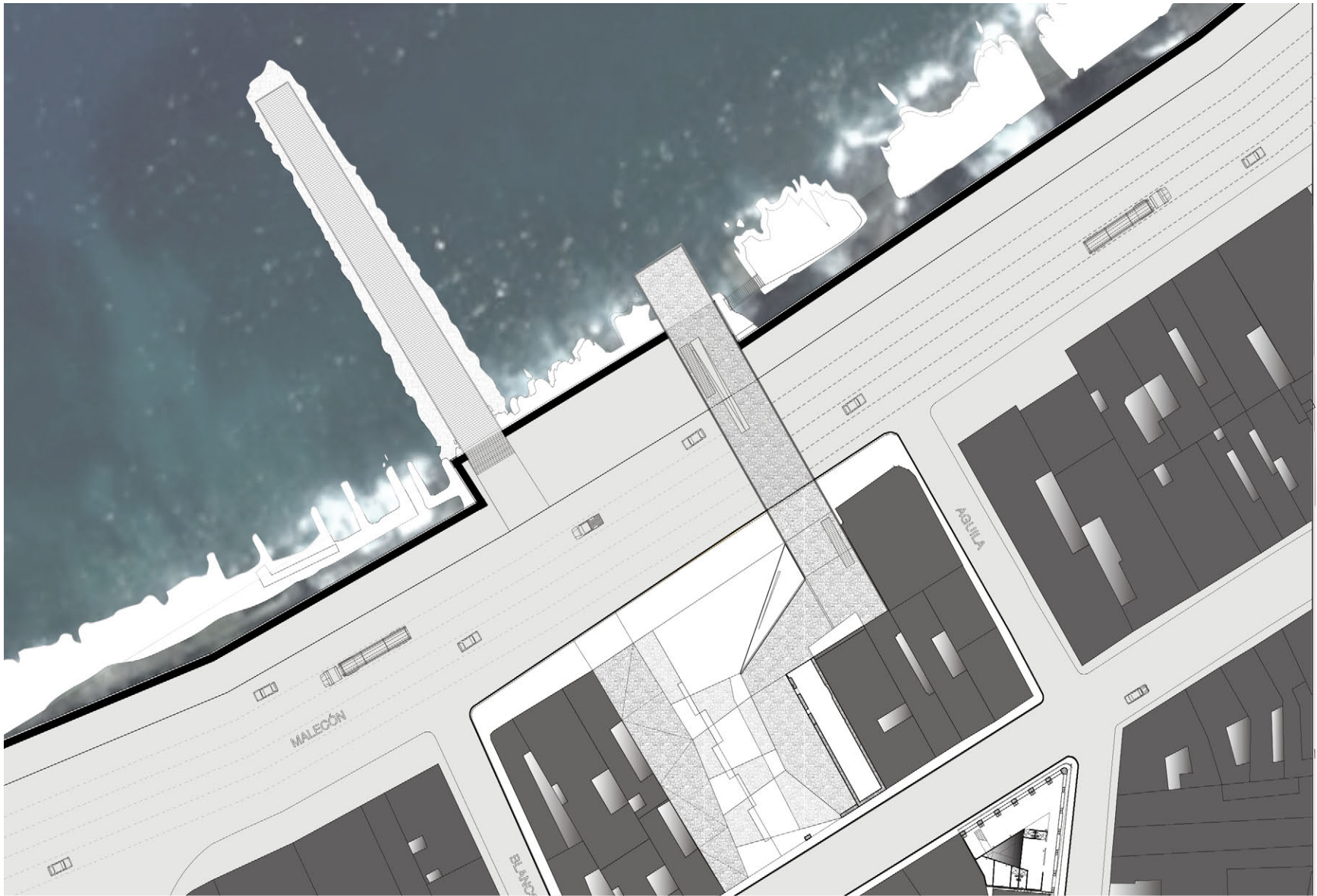


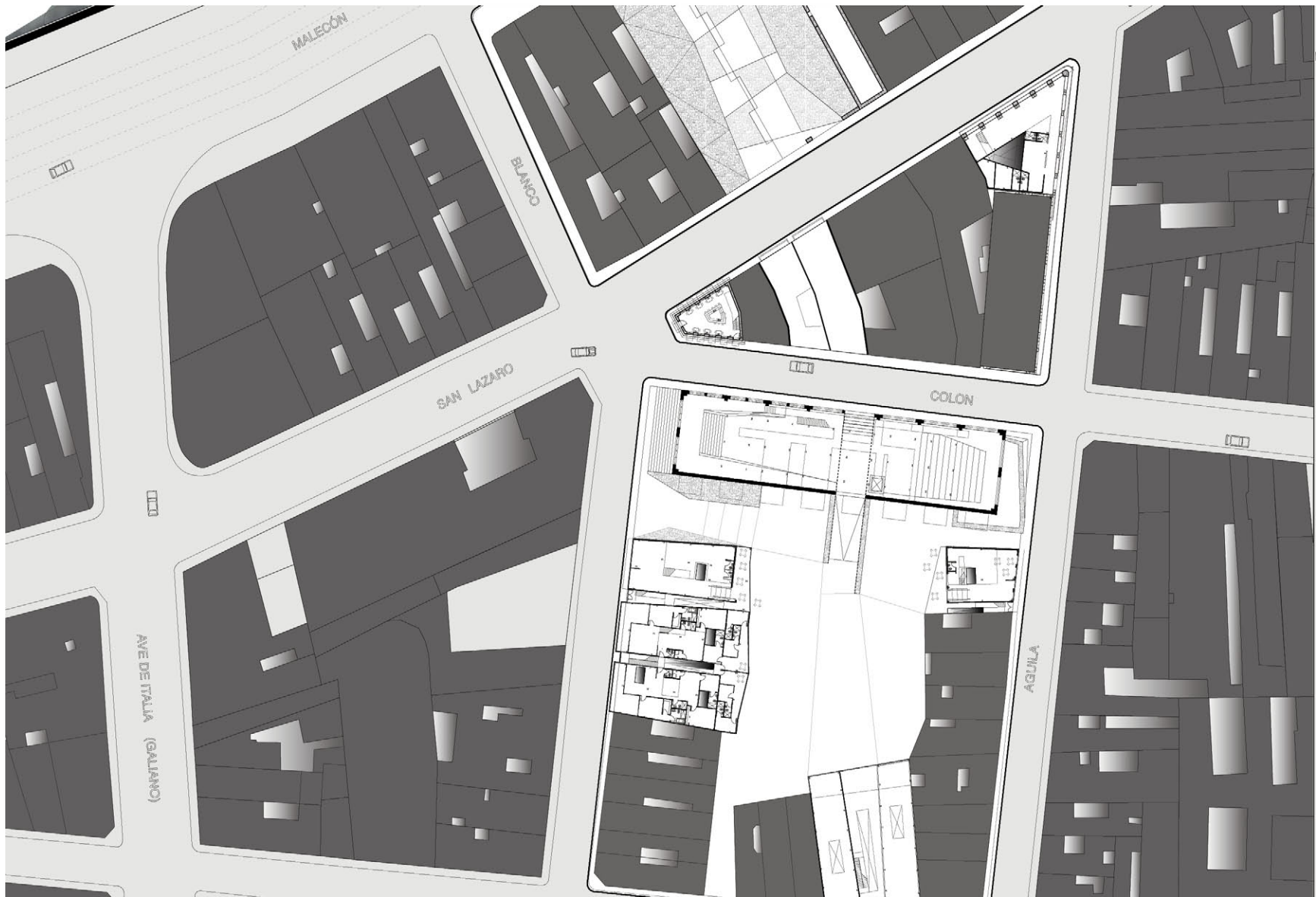
The overall strategy for the disconnected sites is to re-purpose them and allow for a procession towards the Malecón and Straights of Florida. From the southern most courtyard the occupant can move through Planta Eléctrica. A building in bad condition is carved out to create a passage to the new Malecón Plaza. From here the occupant can safely move across the highway to the ocean.

The southern most site features a courtyard that is created by eliminating an industrial warehouse and allowing appropriate sized housing to reoccupy the edges. This new courtyard can be enjoyed by both guests of local hotels and local residents.

Malecón Plaza becomes the next outdoor public space. In Havana, parks and plazas don't typically exist along the Malecón Highway. The proposed plaza would give the residents of Centro a much needed open space in an area that is drastically overcrowded. The end result is the satisfaction of being able to now access the old seawall and ocean water.





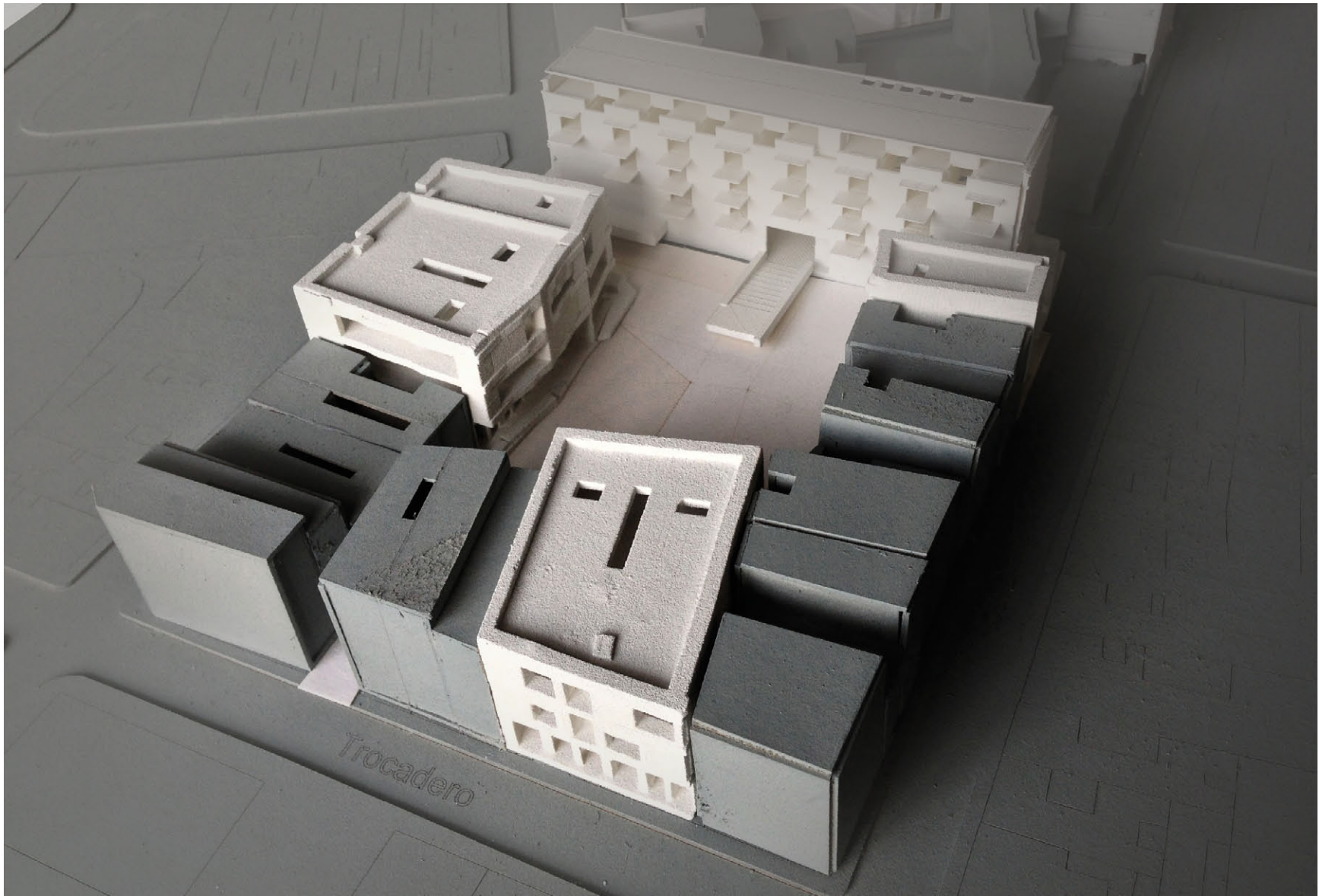


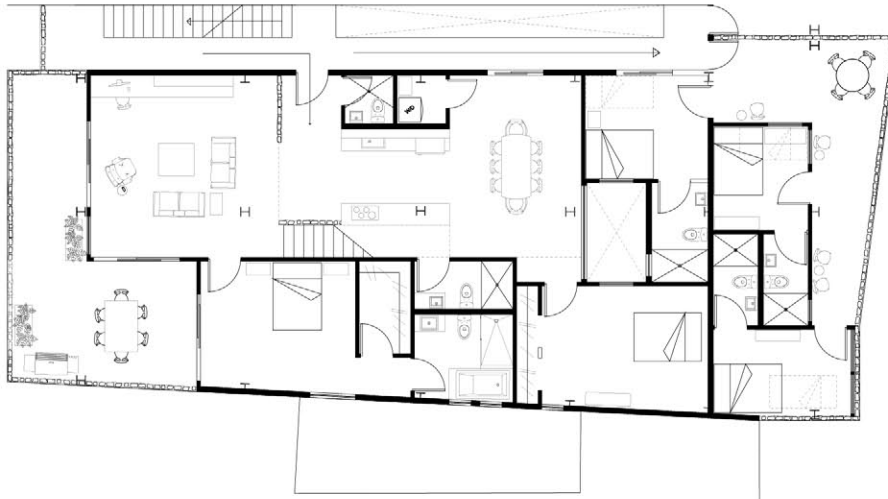
Plan: (Top to Bottom) Hostel Ruinas, Micro-Hotel Centro, Planta Eléctrica + Casa's in new courtyard



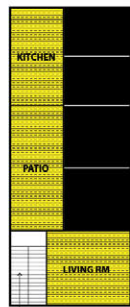


Rendering: Casa Particular 2.0 shown right of Planta Eléctrica





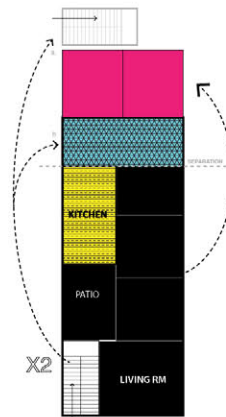
2nd Floor: Typical casa, resident front + guest rear



TYPICAL HAVANA APARTMENT
RESIDENT ONLY



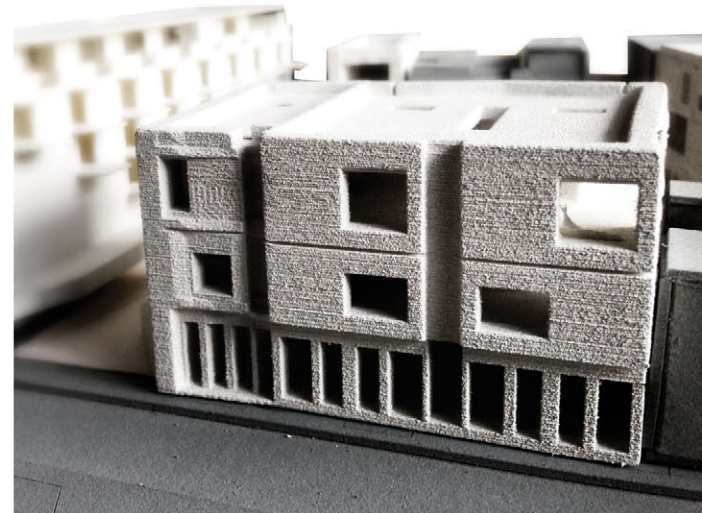
CASA PARTICULAR
ISSUE 1: LOSS OF PRIVACY / SPACE
ISSUE 2: SECURITY CONCERNS

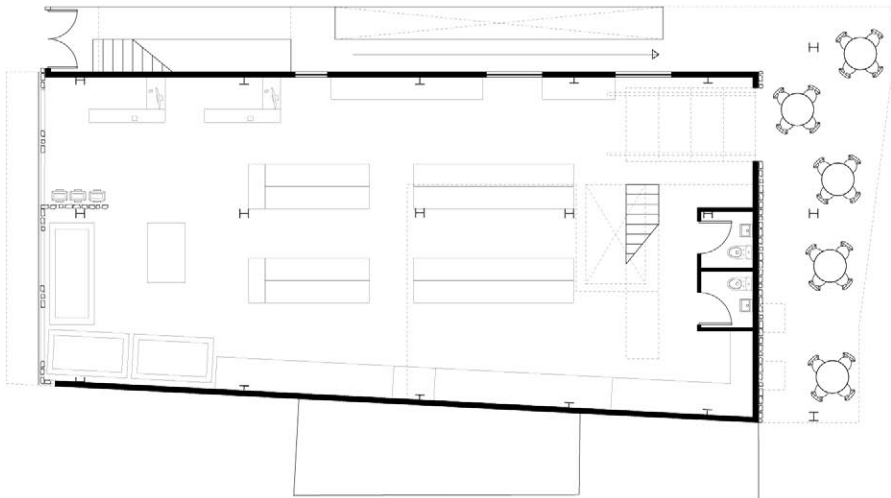


PROPOSED RESIDENT / VISITOR
RELATIONSHIP
SEPARATION AND ADDED SPACE
PRIVATE CIRCULATION OPT a. or b.



During the 'Special Period' which brought a rapid expansion of tourism and a shortage of hotel rooms, the government changed its policy ended the "apartheid." This prompted a new instance of forced sustainable urbanism in the form of the home as hotel concept. In 1997 Cubans were allowed to share their home to tourists through casa particulares. This was one of the one of the first times Cuban's could directly benefit from tourism by renting out rooms in private homes. While this has created a new middle class of in the hospitality sector, it has also prompted Cubanos to give up rights to privacy and security in their residences. Prompting for a rethinking of typology via Casa Particular 2.0. (Plan left: Typical Casa plan showing 3 rental rooms. Plan mirrors to create more units and double loaded corridor)

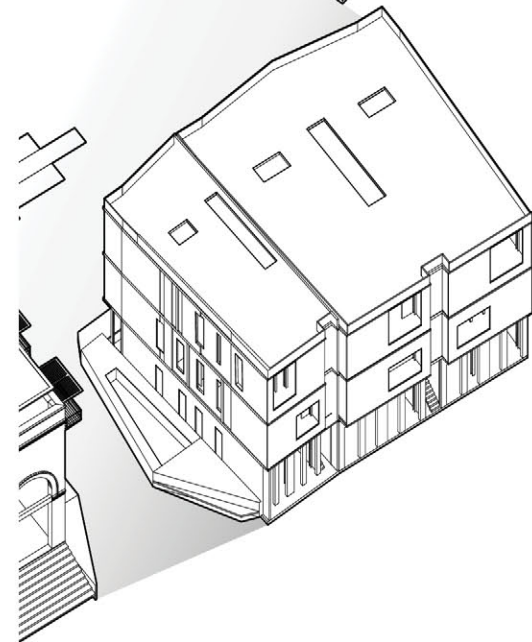
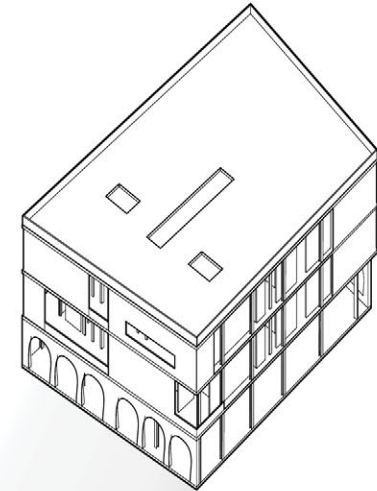


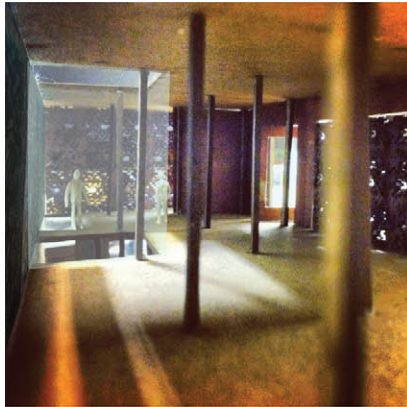


Ground Floor: Flexible space at grade can act as grocery, casa, restaurant, cafe ect. Depending on neighborhood demand

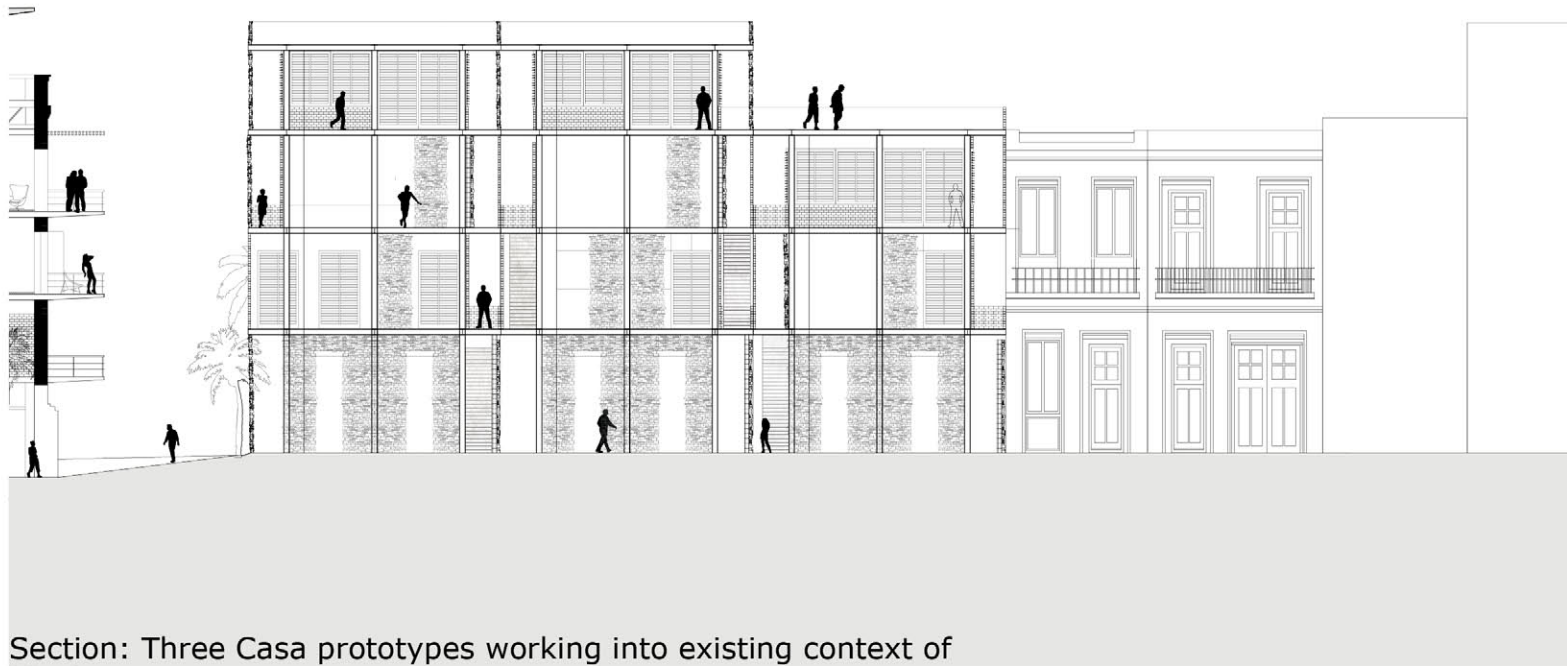


61 3rd Floor: Grey zone= patio/external space with 2 room rental

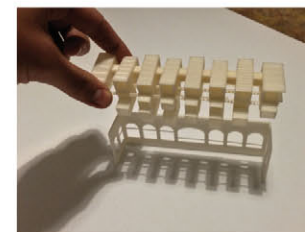
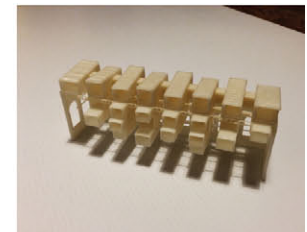
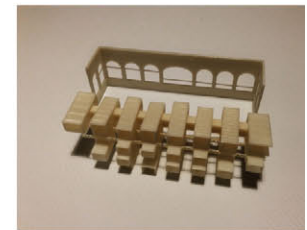
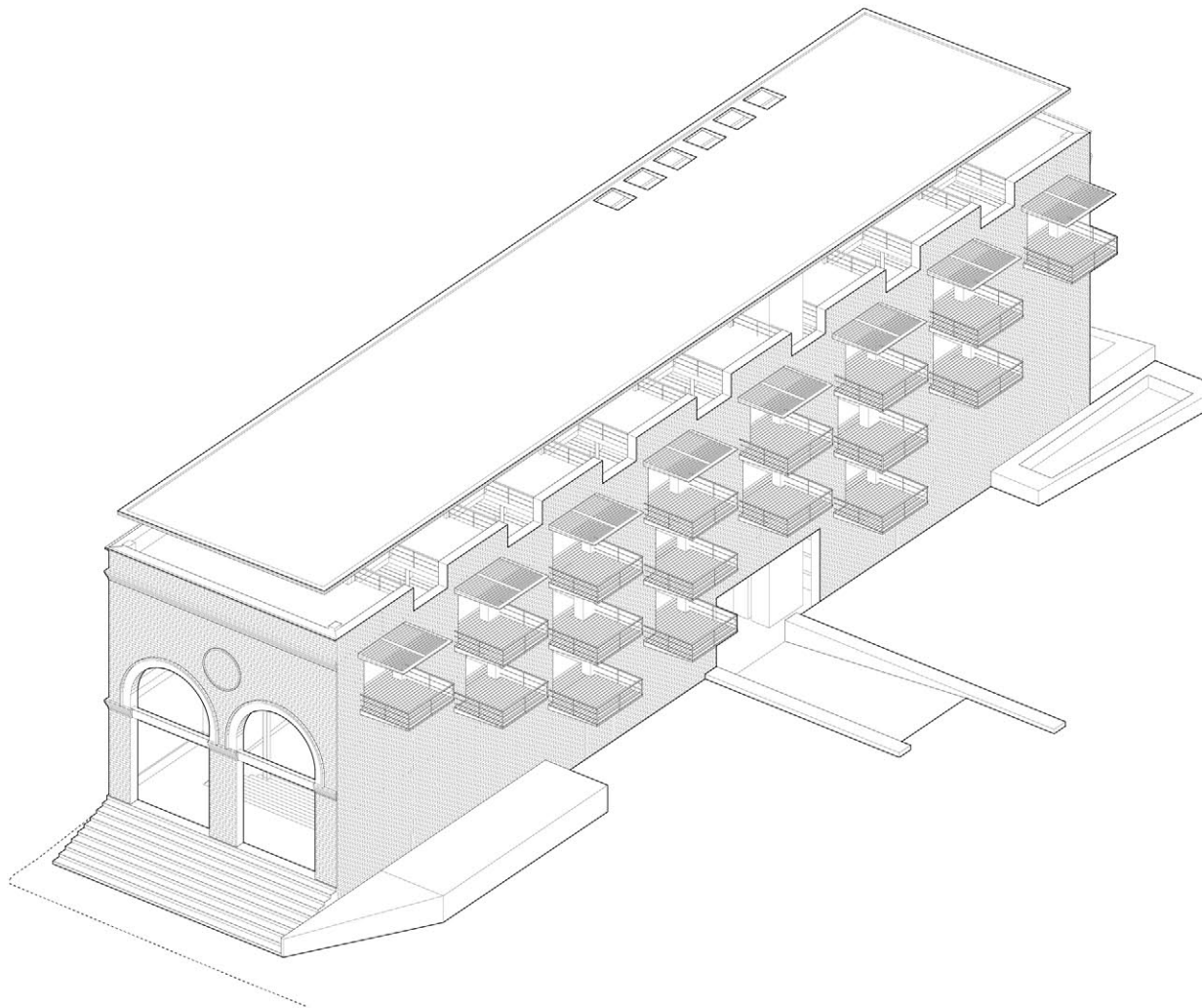




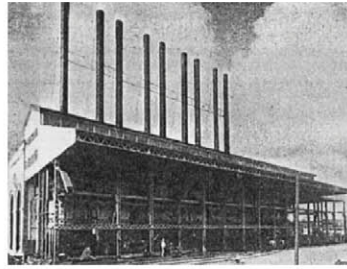
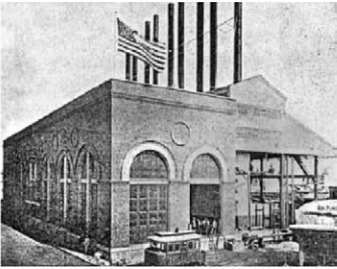
Guest accommodation is moved outside of the families private quarters which allows for gained privacy for both parties as well as increased security. The new typology uses the infill building system discussed earlier. It features a structure of column and slab that allows for infill wall and screening system. The early model photos (left) illustrate courtyards within the housing units and brick debris screening for privacy and shading. The plan is organized to allow the family to occupy the front or street side of the casa. Each flat has two rental units, which is ideal to most casa particular owners.



Section: Three Casa prototypes working into existing context of block



Axon: Showing old a new systems collapsed to create new Hotel for Centro. Sketch Model (right): The early models shows concept for Planta Eléctrica to pack rooms into old shell while allowing for new overhead condition inside large interior space.

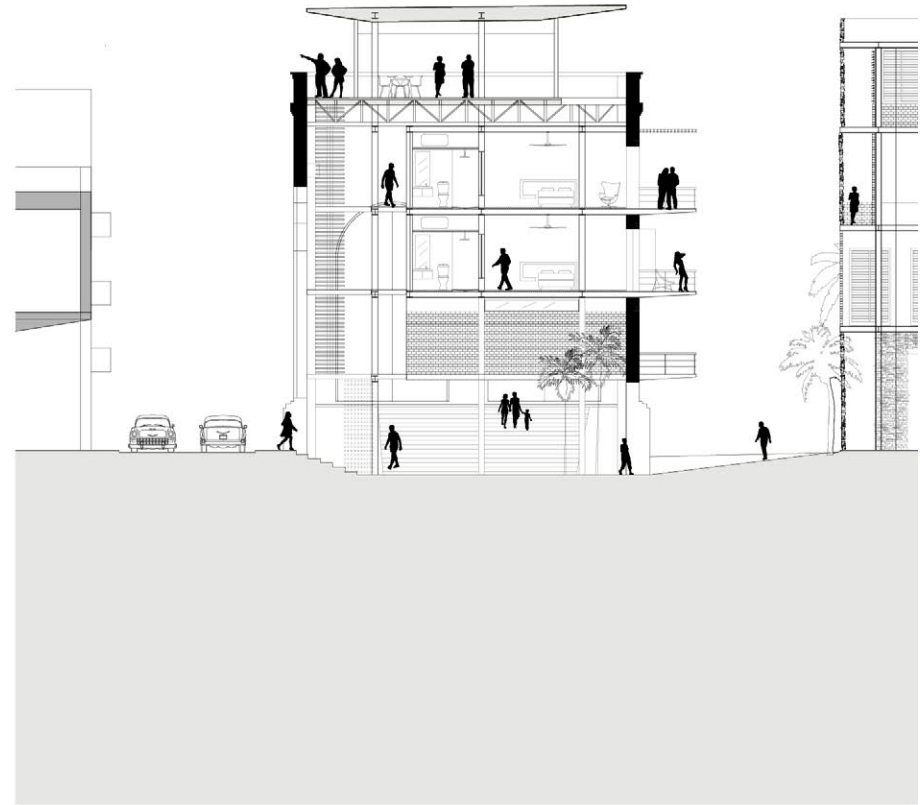
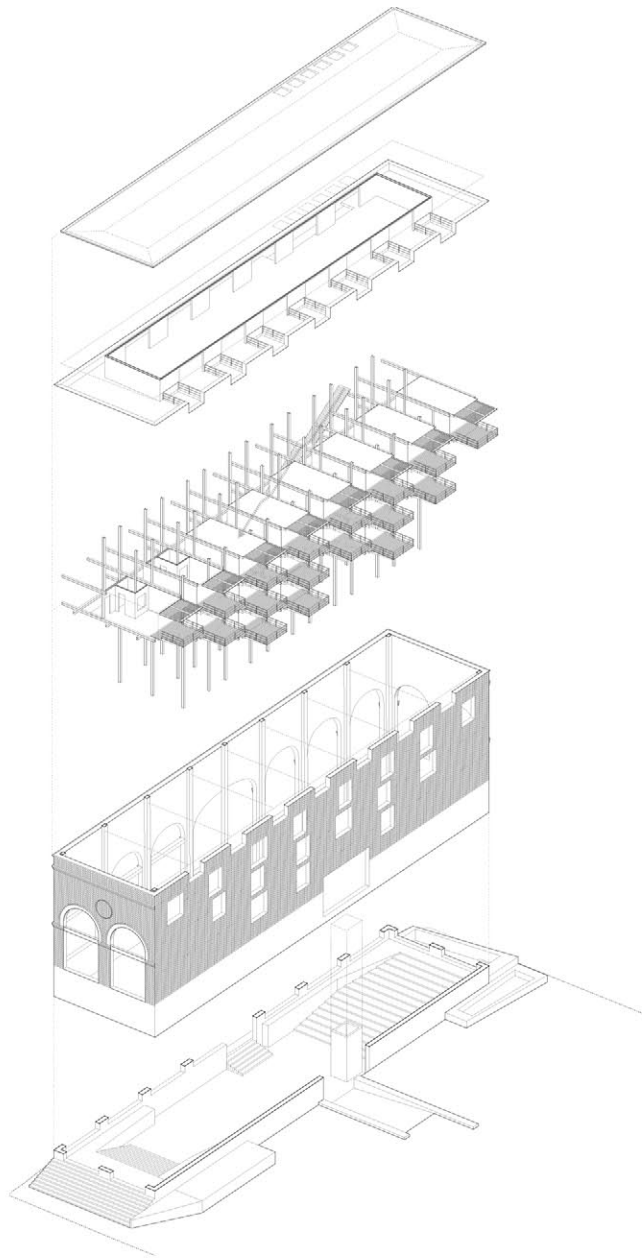


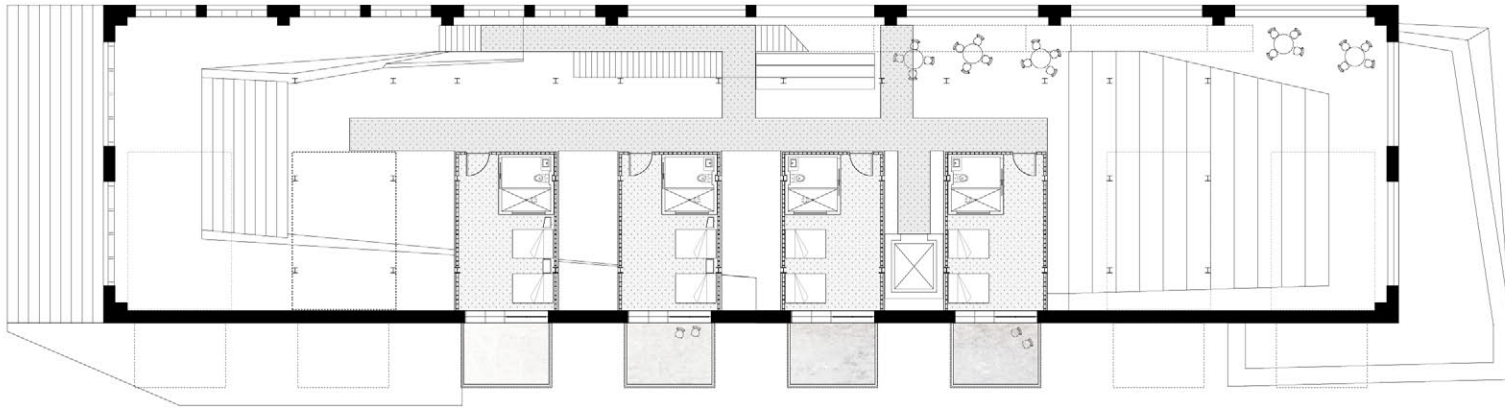
The most non-prototypical building on the several sites is Planta Eléctrica. In English, the Columbus Power Plant was originally built in order to generate the driving force for tramway electrical in 1901 for the city of Havana. The feature of this building is the unique brick facade and arches. It is currently being used as a warehouse space for the Government and considered to be in sub-par or bad condition. The city is currently looking for new purposes for the unique structure.

The new proposal for Planta Eléctrica is to turn it into a usable building for both the public and future tourists. The original building is embedded into the ground with a basement located 3 meters below street grade. In order to negotiate this difference a 'new' ground is created to allow for a public movement through the building. The middle arch on the front of Planta Eléctrica is opened up to street grade to allow for the movement from rear courtyard to Malecón and ocean access.

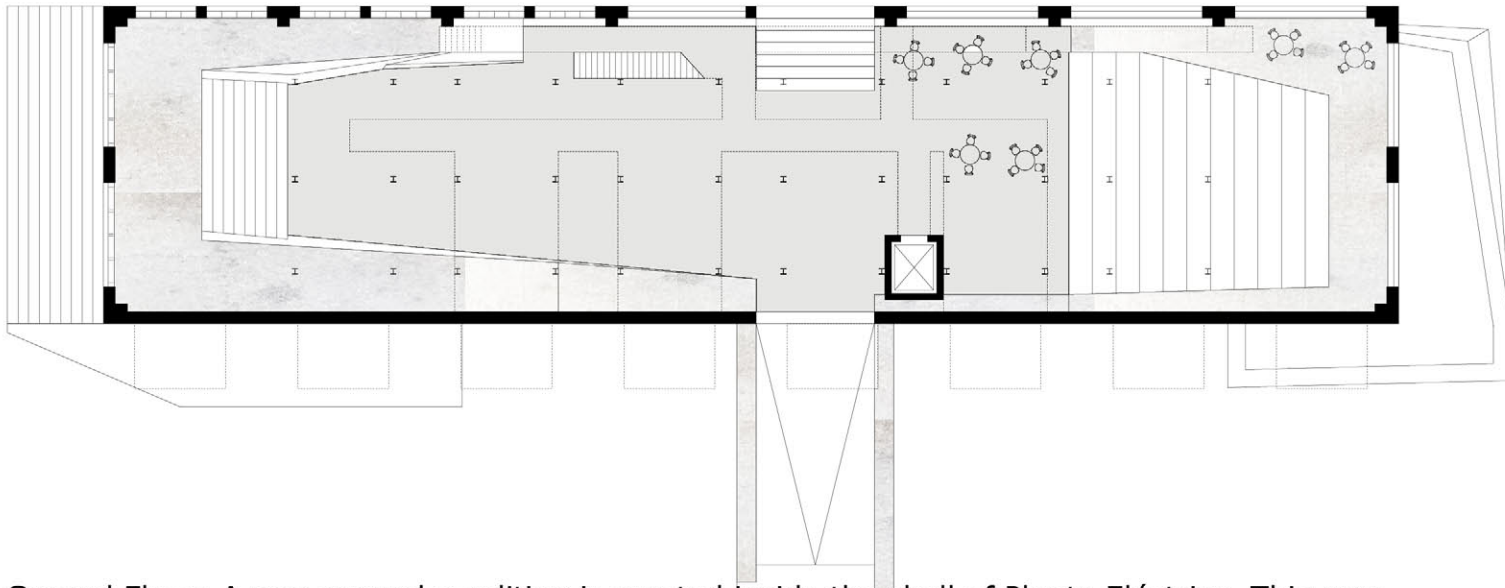
Rooms are situated above the new ground and create an overhead condition framed by light wells on the southern facade. The rooms have a feeling of being suspended within the large volume and catwalks bring occupants to the rooms. A linear stair follows the front arches and brings the public to a new lobby / observation area on the 5th floor. This canopy space is embedded into the original brick shell which serves as a balustrade for the new exterior shaded space.

Section (bottom): Planta Eléctrica cross section showing how individually conditioned rooms and large interior unconditioned volume interact. Exploded Axon (left): showing the new ground, existing shell, room systems, supporting structure and new upper canopy space.

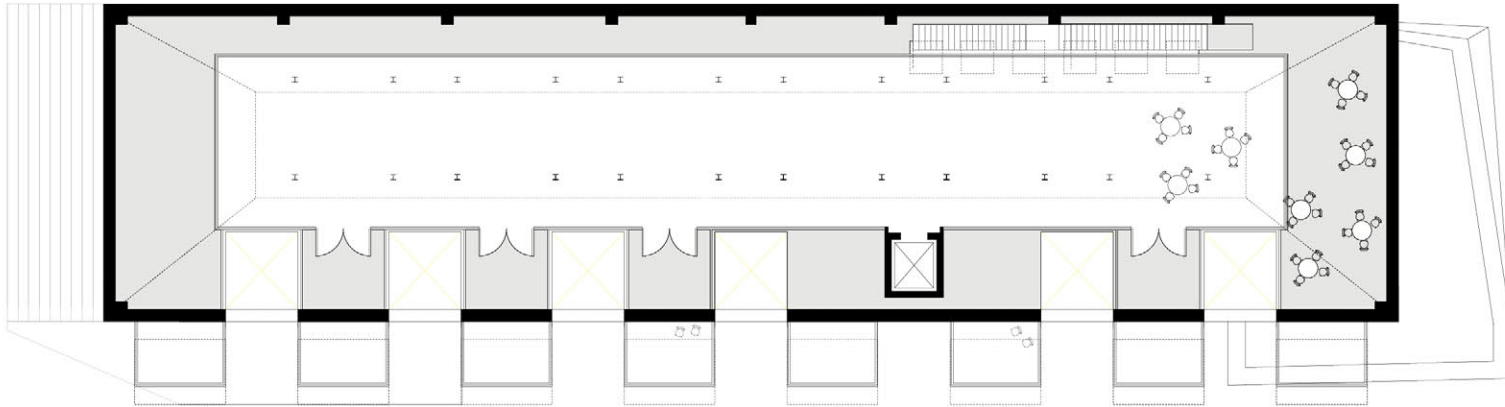




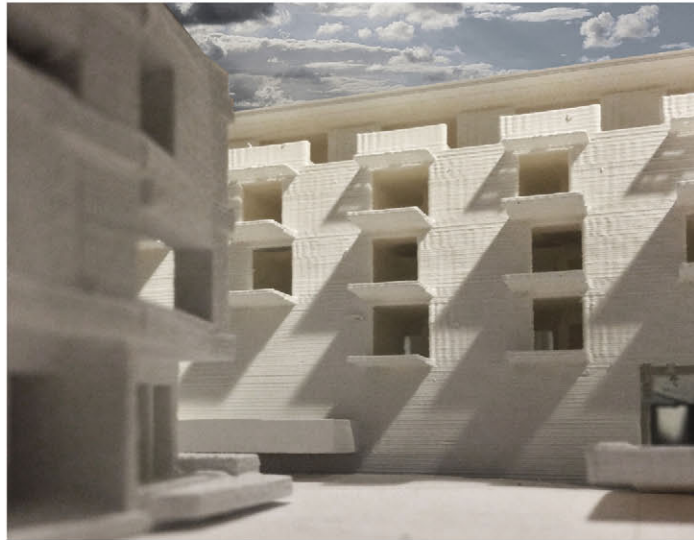
3rd Floor: At this level occupants move through the buildings new catwalk system which brings them to individual rooms which break the back brick facade of Planta Eléctrica. This provides all of the 16 rooms with southern facing balconies with louvered shading devices.



Ground Floor: A new ground condition is created inside the shell of Planta Eléctrica. This new ground negotiates between exterior grade and the basement of the old building. This creates a new Public forum for both locals and tourists.

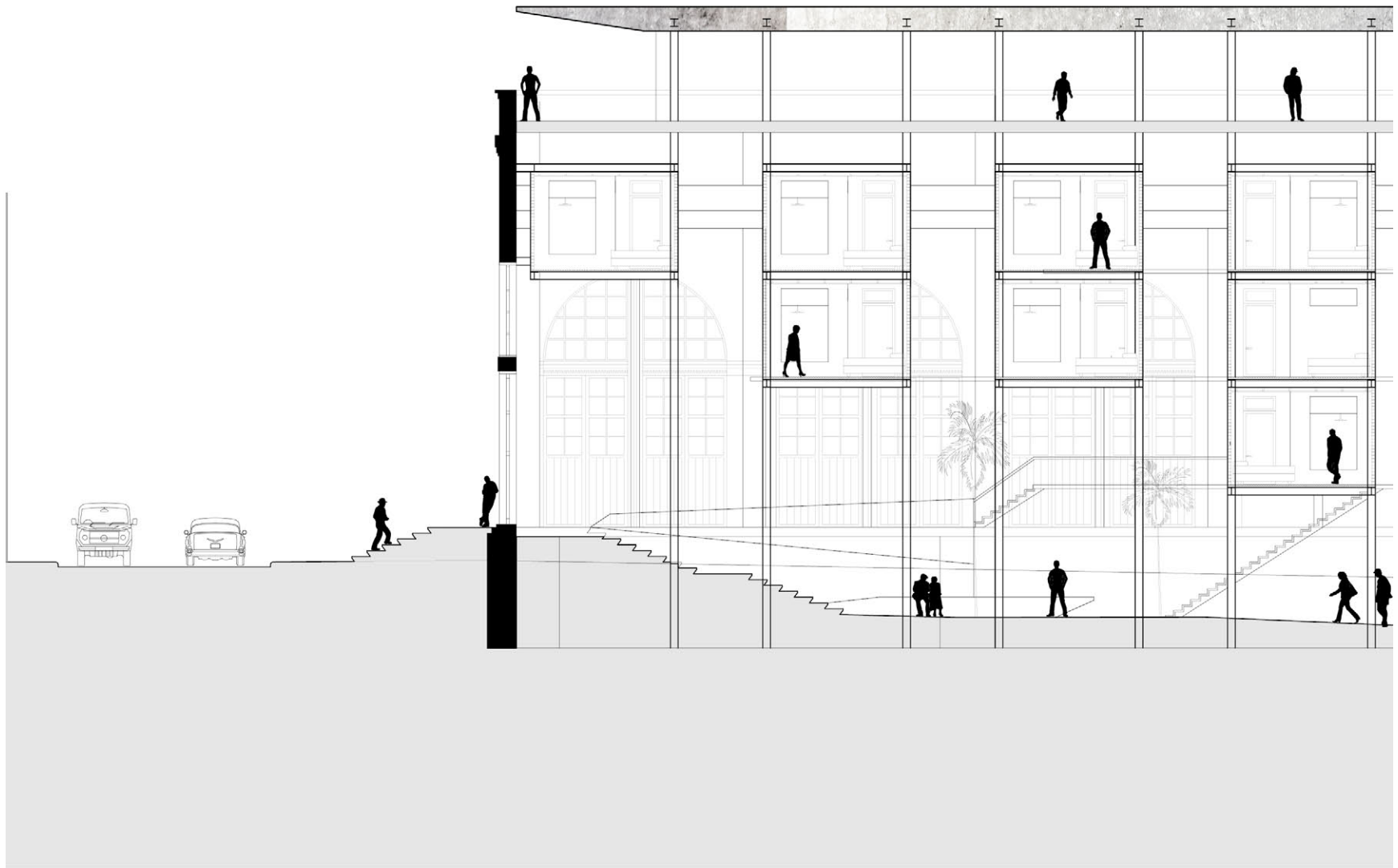


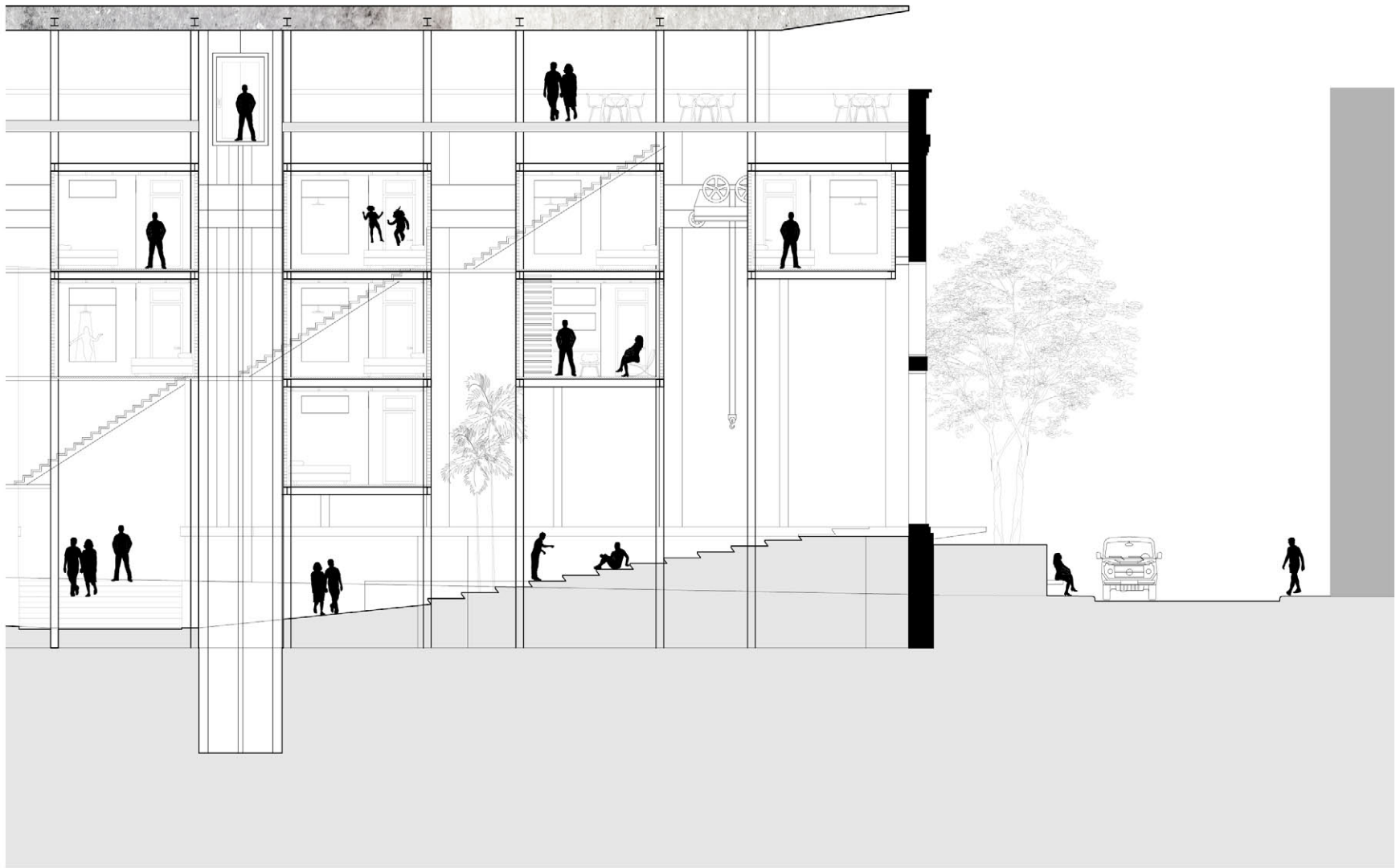
5th Floor: The top level of Planta Eléctrica is a where the lobby for the hotel is located. Occupants can also take advantage of Ocean view north as well as city south. This main canopy space acts as a new shade to the existing structure while offering dramatic views of Centro. Model Photos (left to right): Interior courtyard within housing block. Birds eye view of the building in relation to micro-hotel and housing in courtyard. Currently most of the arches are filled with as hoc brick. These will be removed top open up shell and reused on Hostel facade.





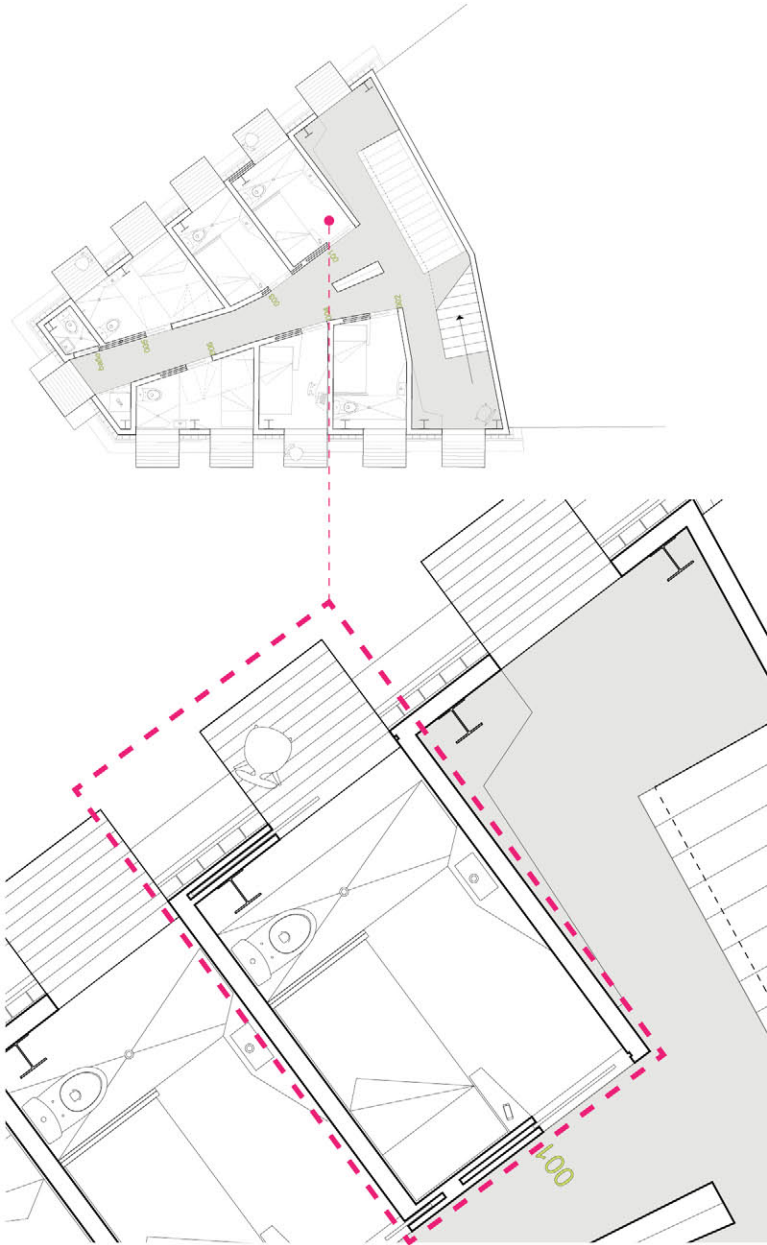
Model Photo: Inside courtyard within the block, south view of Planta Eléctrica balconies + shading devices





Section: Longitudinal cut of Planta Eléctrica



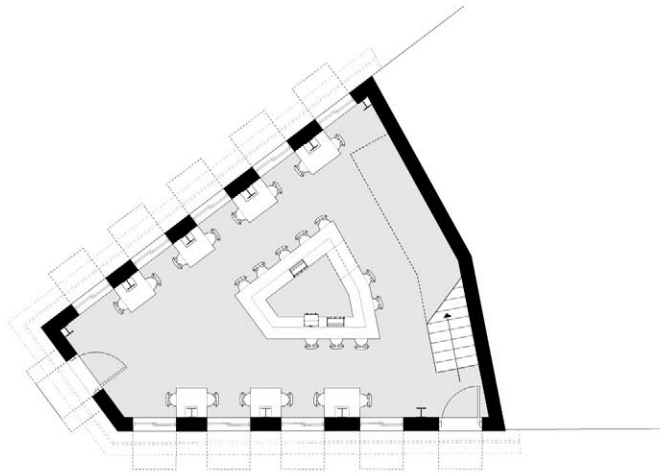


Hotels have become standard issue in Havana ever since Americans began to control the tourism industry in Cuba from the 1920's through the 1950's. In 1958 Conrad Hilton opened his franchise in the city, only a few years before the Revolution. Not much has changed with the hotel typology since the Havana Hilton's conception.

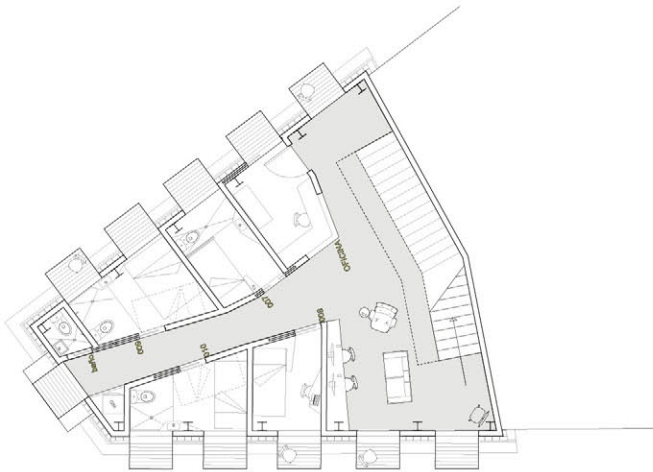
The Micro-hotel concept, popular in Europe and Asia where space is at a premium is totally foreign in Havana. This type of appreciation for compact living accommodation is non-existent in Cuba. The Micro-Hotel Centro prototype aims to create a new typology for the city, that can also give privacy and comfort to its occupants.

Unlike the hostel, the Micro-Hostel features private accommodation, with private bed and bath in a single room. Each of the 10 rooms have at least two twin bunk style beds with built in European style toilet / shower and sink combination. Each room has a small and private balcony. (Left: 3rd Floor Plan and room detail)

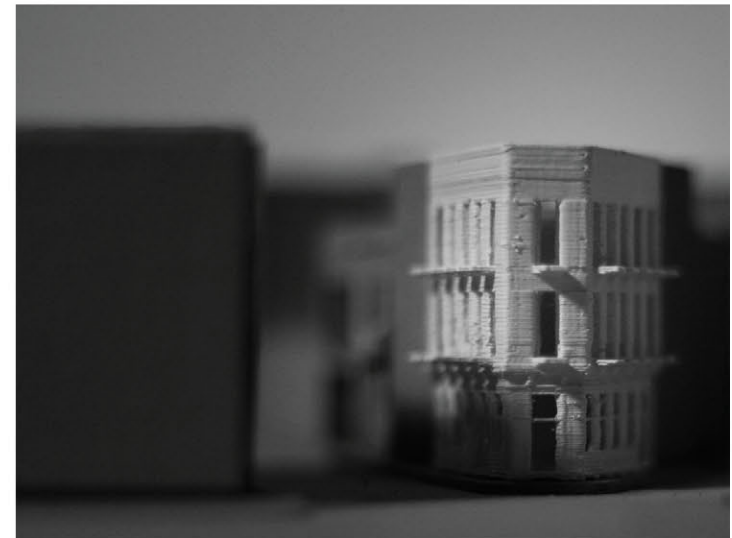
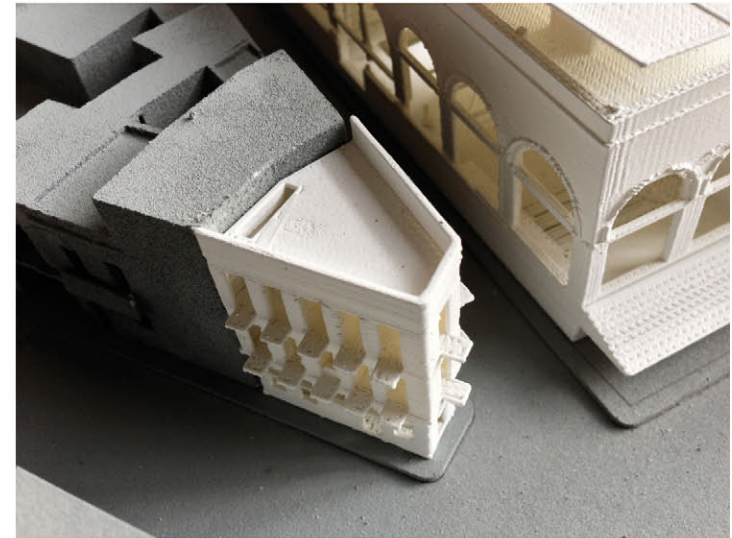
The Micro-Hotel sits above an existing one story corner facade from the late 19th century. The original 2nd and 3rd floors collapsed over time and the new Micro-Hotel fills the old void and follows the geometry of the original building. This creates a new grid of balconies and openings that help feed light into the rooms as well as extending the tight footprint to the Havana balcony line.

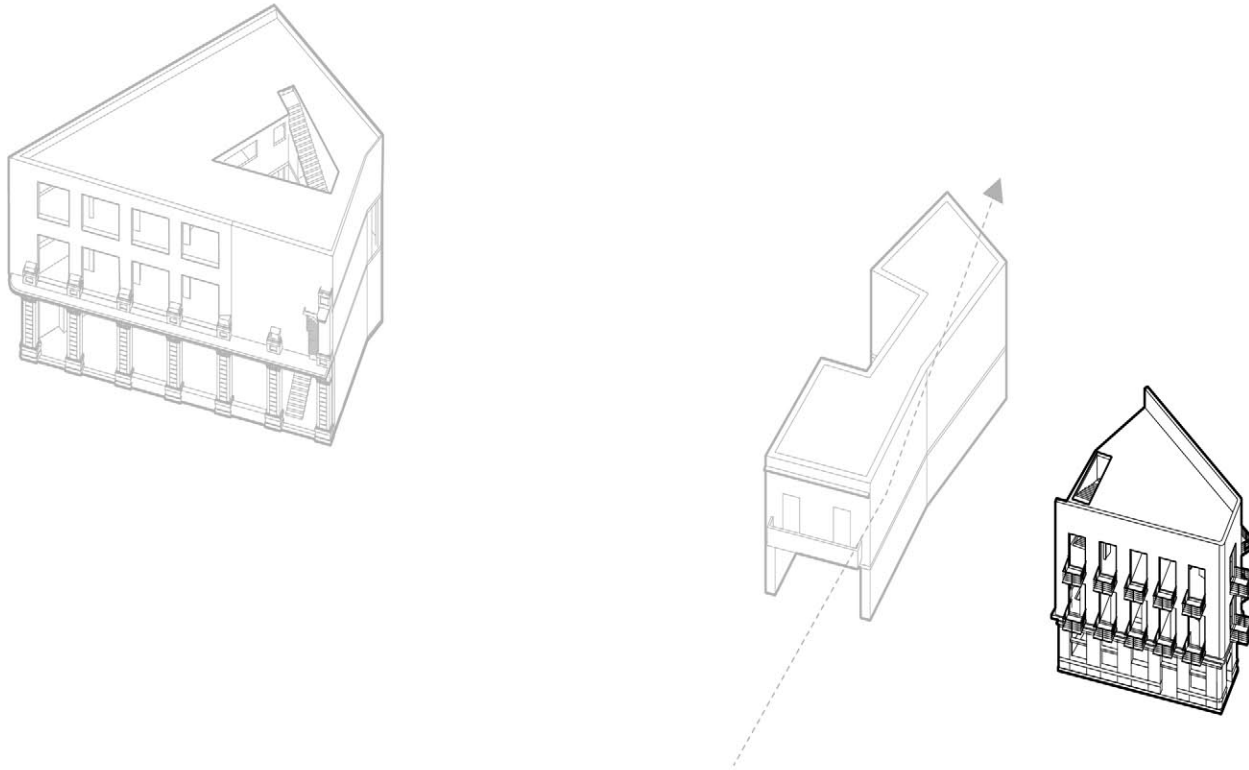


Ground Floor: Coffee Bar at base of Micro-Hotel



2nd Floor: Lounge / Office + 4 Micro rooms





Axon: Micro-hotel in relation to Hostel and Planta pass-through to ocean and plaza.

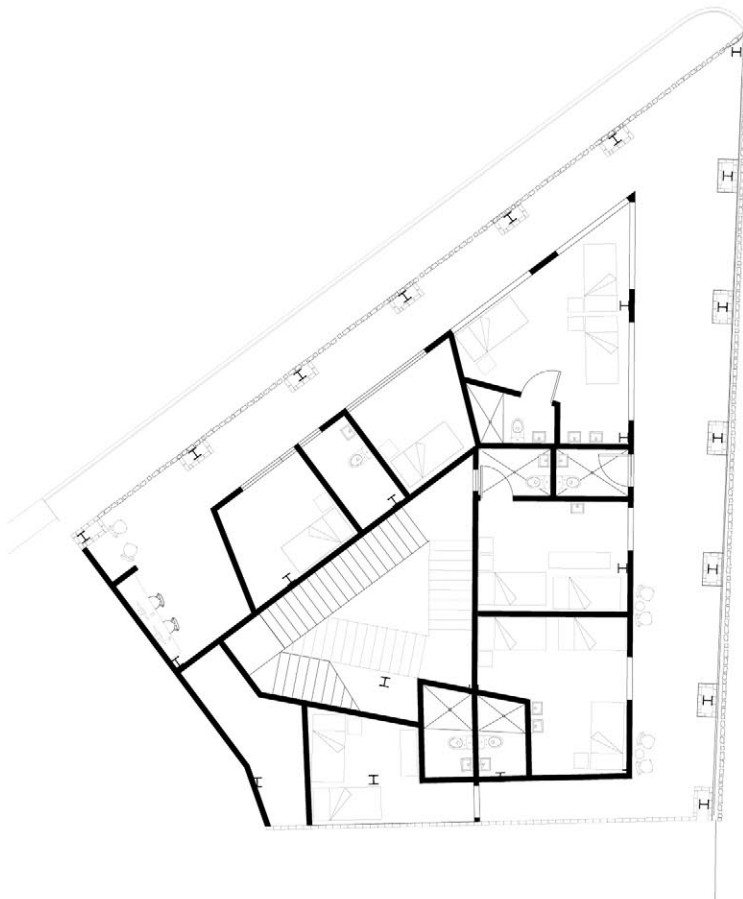


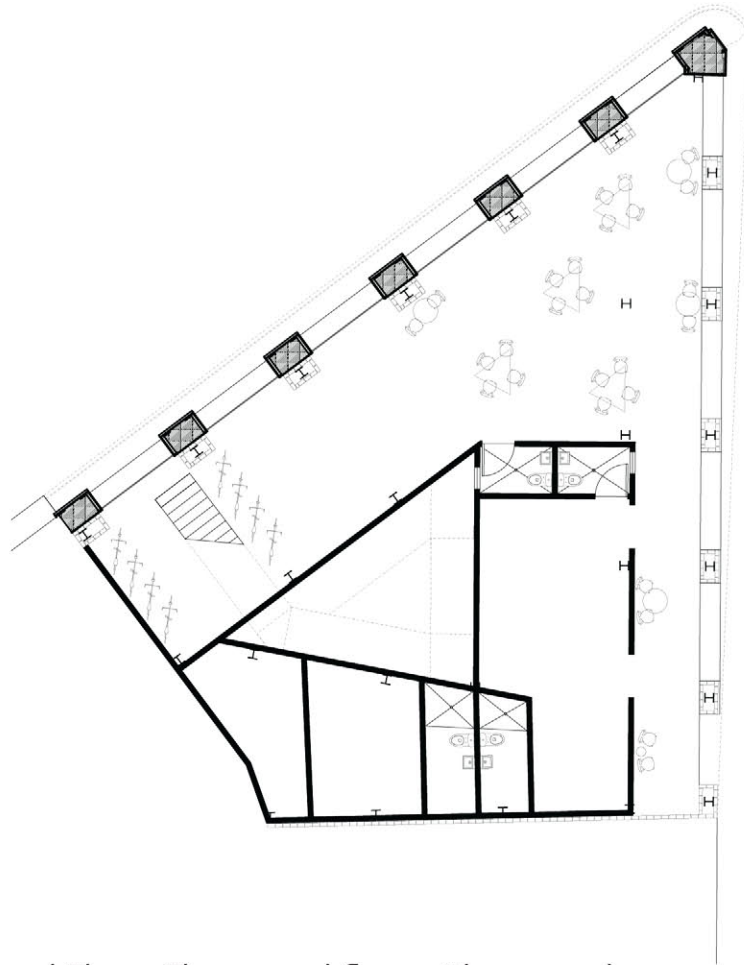
Rendering: Hostel Ruinas negotiates the existing facade and forms a Brise soleil through brick debris. Bricks from Planta arches are reused for Hostel facade and screening system

Havana's tourist accommodation is traditionally based on the foreign hotel or resort typology. The casa particular or Cuban Housing with rooms for rent changed this perception in 1997. Now the city is full of affordable Casa's for rent. Some of the issues with these is that the Casa's can range widely in quality and appearance. Many backpackers and budget minded travelers prefer this type of accommodation.

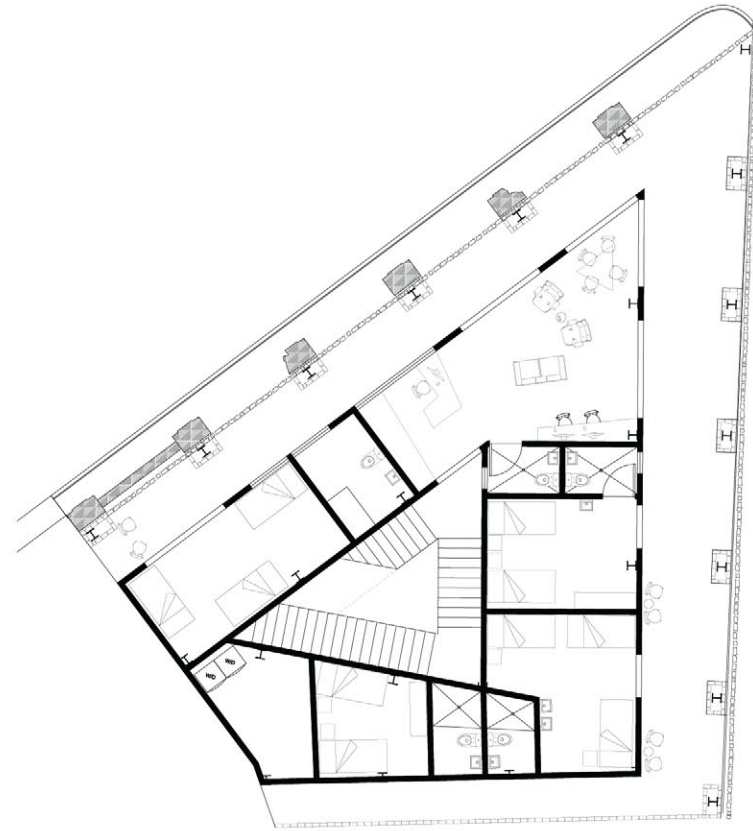
The city is lacking a typology that could be extremely beneficial to hosting many travelers in a small footprint. This format would be the European style hostel. The Hostel Ruinas is prototype to test this style of accommodation within the dense fabric of Centro.

The existing eastern corner parcels only remaining feature is a northern facing facade. The concept for the hostel was to keep the existing facade and continue its geometry into the new structure. This creates a new corner edge condition of recycle brick. In order to negotiate the sharp corner, the interior is organized using a triangular spaces. This creates a center courtyard that also acts as a circulation system for the building. The next organizing feature is the wrap around Brise soleil. This shaded terrace protects the interior shared rooms from the intense tropical sun and climate. The shared hostel rooms are located off the Brise soleil space and enjoy filtered light through the brick debris shading system on the exterior of the building. (Plan Left: 3rd Floor)

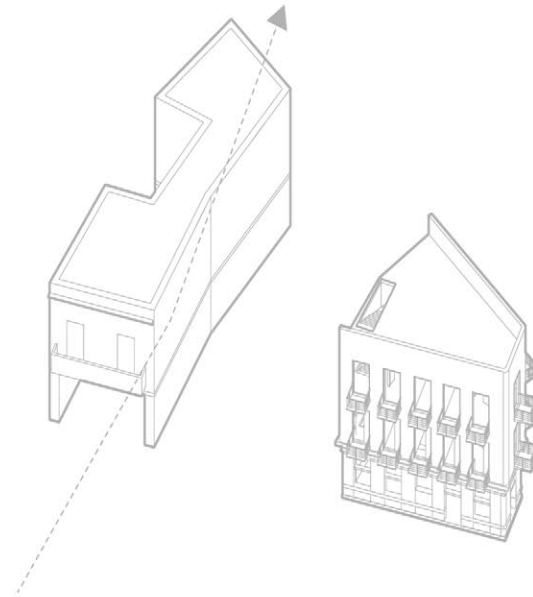
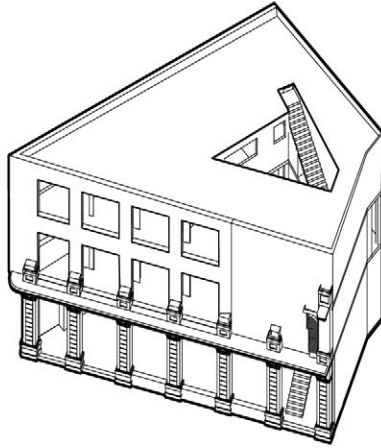




Ground Floor: The ground floor with exposed colonnade of the relic facade becomes a multi-use space for bar, cantina, restaurant types spaces. Private access through center courtyard brings occupants to lobby / lounge of Hostel Ruinas.



2nd Floor: From the triangular center stair / courtyard space the occupant moves into the main lounge and lobby of the hostel. From here a terrace or Brise soleil space with is screened with brick debris. Here the occupant can experience the relic facade.



Above Diagram: the hostel in relation to building pass way and micro-hotel on opposite corner. Image left: Birds eye view of hostel and triangular courtyard and egress stair.

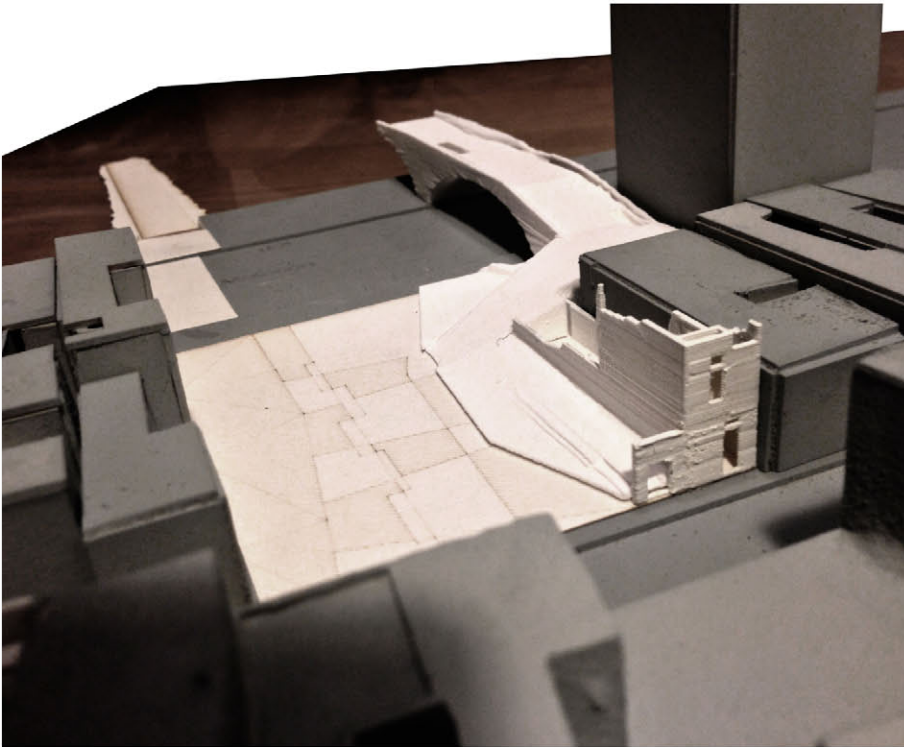


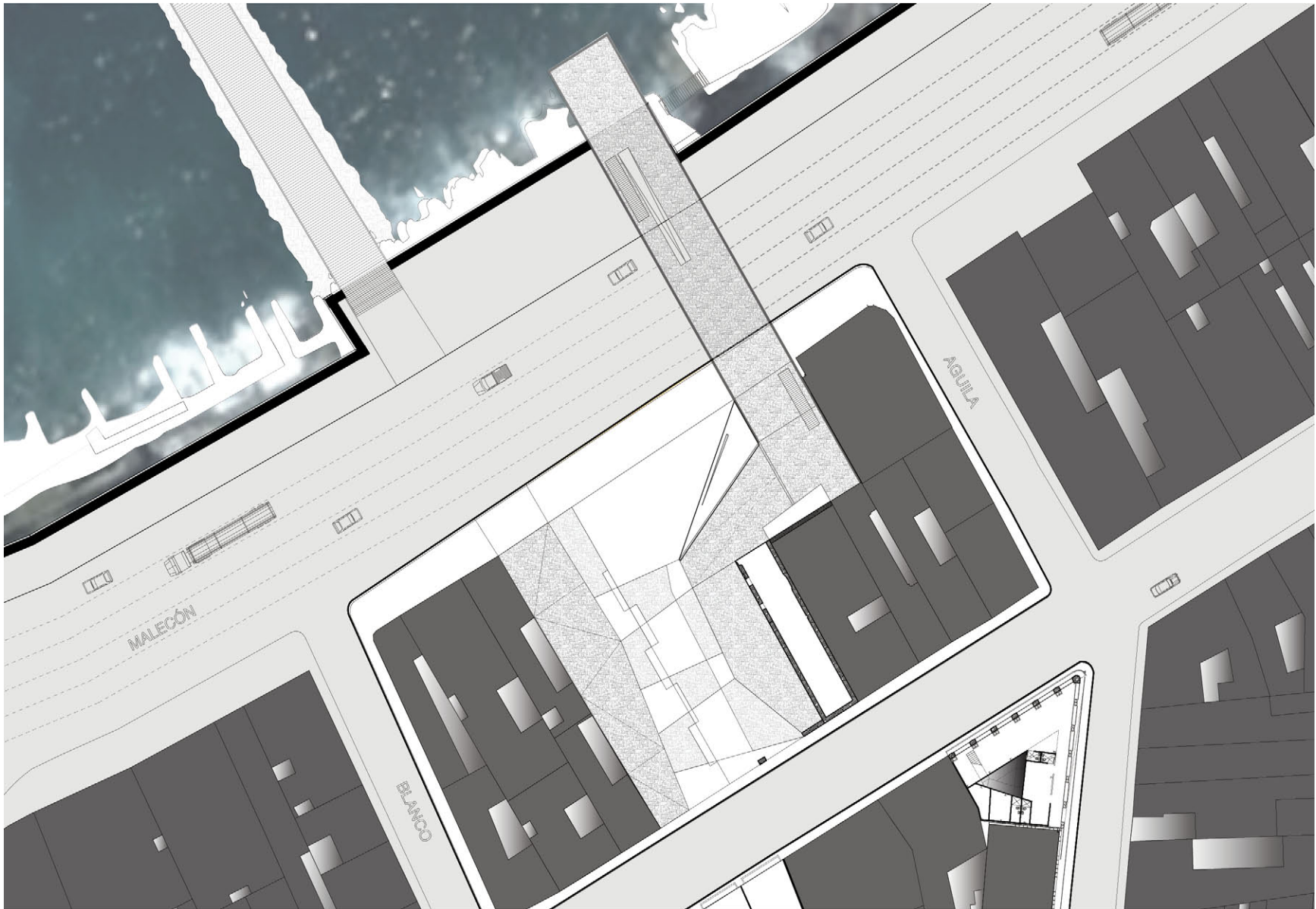
Rendering: Showing Bridge + Jetty during carnival along the Malecón. The pedestrian bridge creates a safe route to the new ocean access point as well as serves as a lookout for festivals

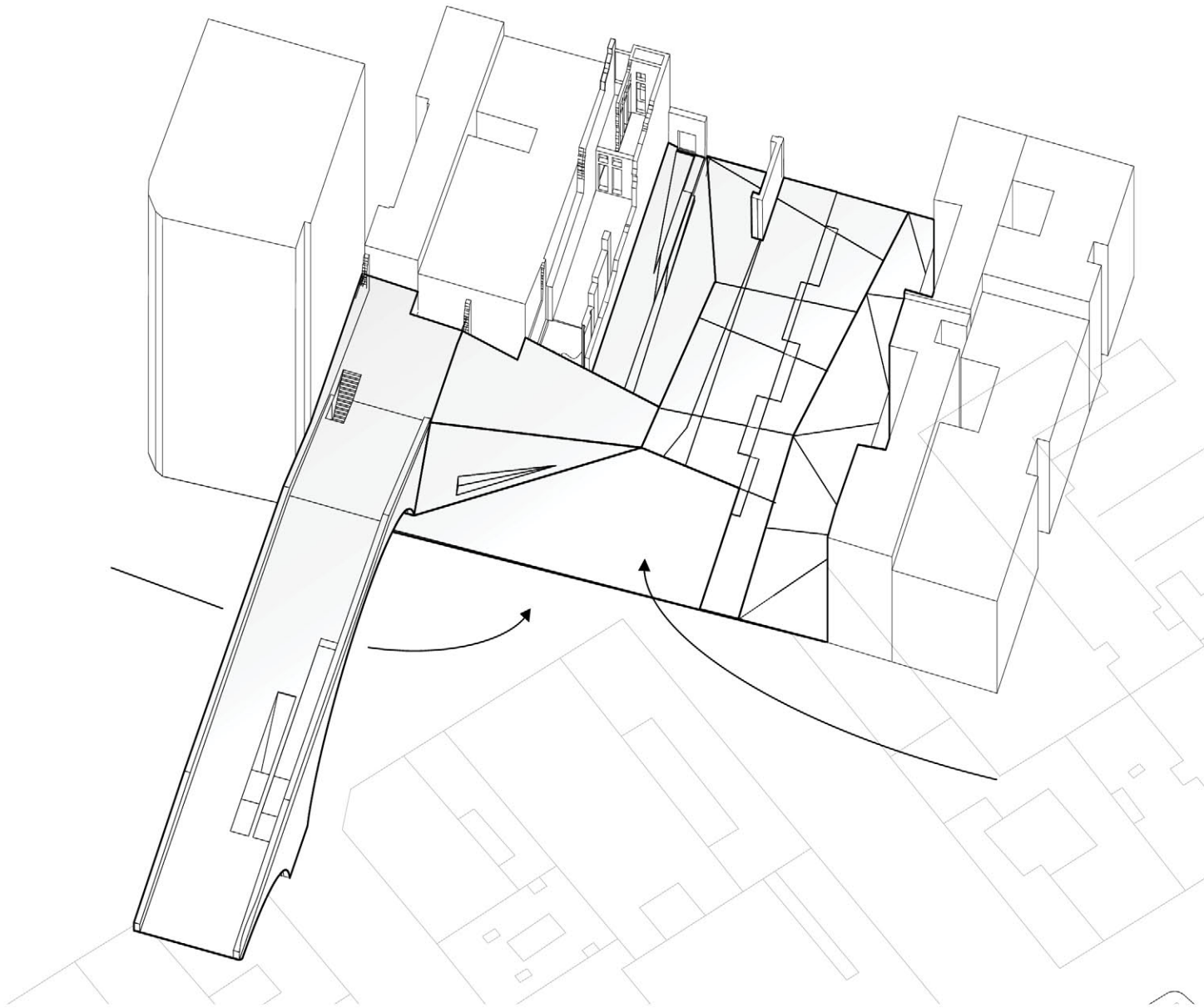
The northern most site is located off the Malecón highway across from the Straights of Florida. It was home to several buildings that have collapsed over time creating a modern ruin. Because Centro Havana is the most dense neighborhood in the city, the open space is ironically needed but unusable currently. The city has plans to fill the lots with generic hotels and reoccupy the block.

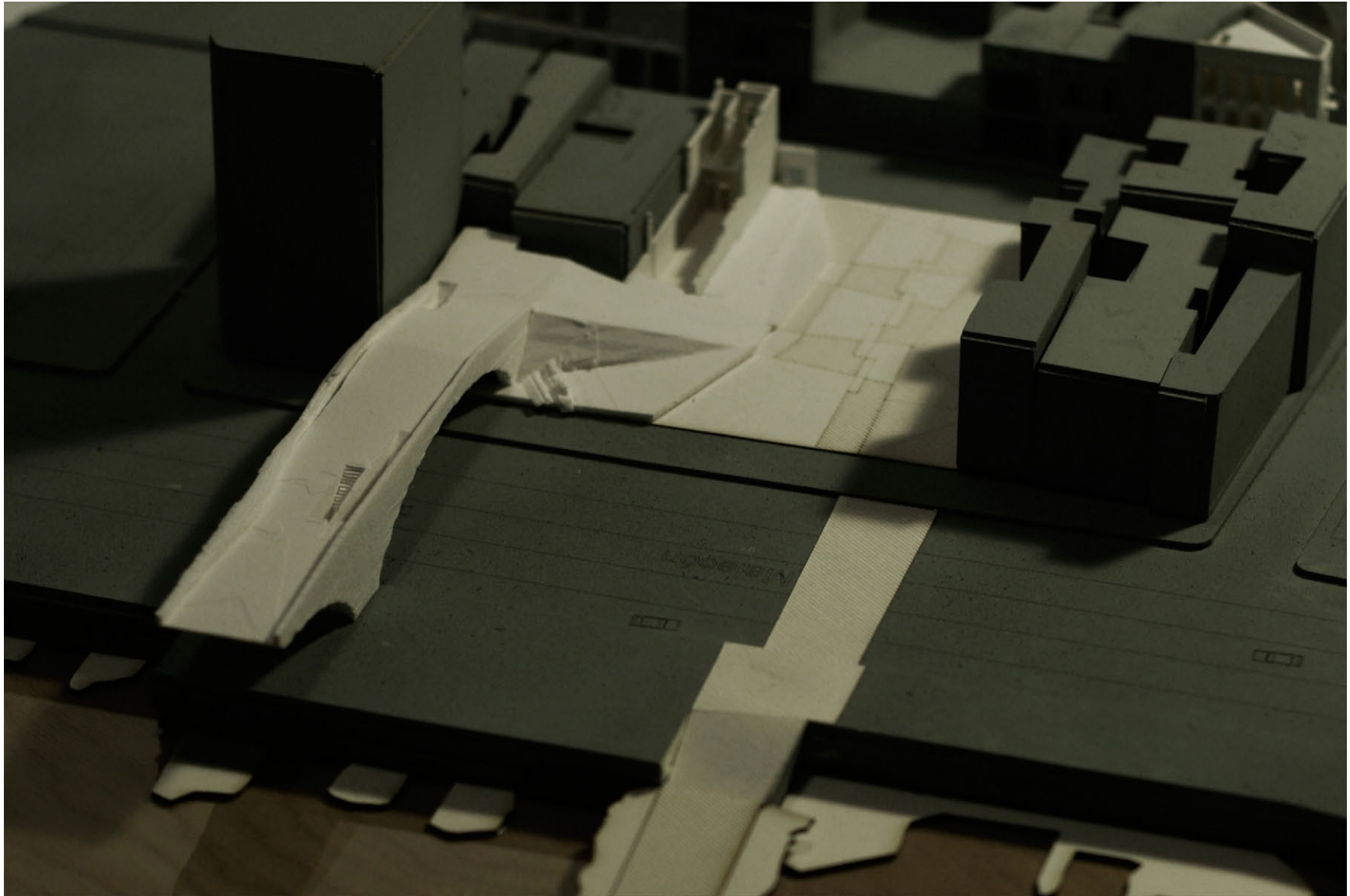
But, Malecón Plaza concept intentionally takes the opposite approach. The idea is to give Centro a usable open plaza space with connection and access to the ocean. The main feature of the plaza is a pedestrian bridge which safely moves occupants from one side of the Malecón Highway to the other. This bridge also acts as a viewing platform for when the Malecón is opened up for festivals, carnivals or just general gazing north towards Florida. Repurposed brick and debris are once again utilized in the plaza this time as surface. Bricks clad the ground and begin to move up the face of the new bridge. The bridge wraps an existing building in serious decay and folds to become outdoor seating.

Once across the bridge, occupants can move down either a stair or ramp and proceed to the new ocean jetty. This now gives both locals and tourists a way to access the ocean and old seawall system that was once denied. Fishing, swimming and sunbathing can now be enjoyed by all.

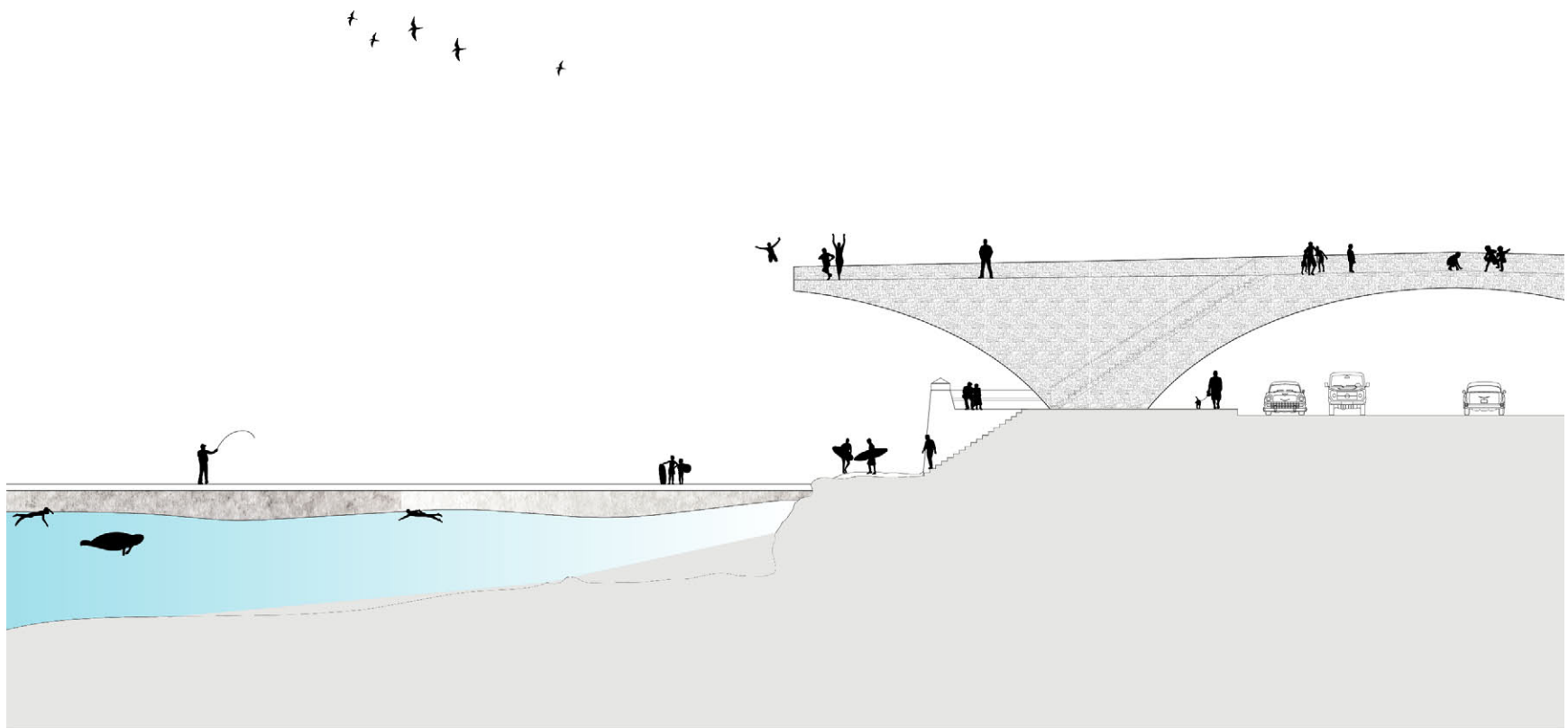


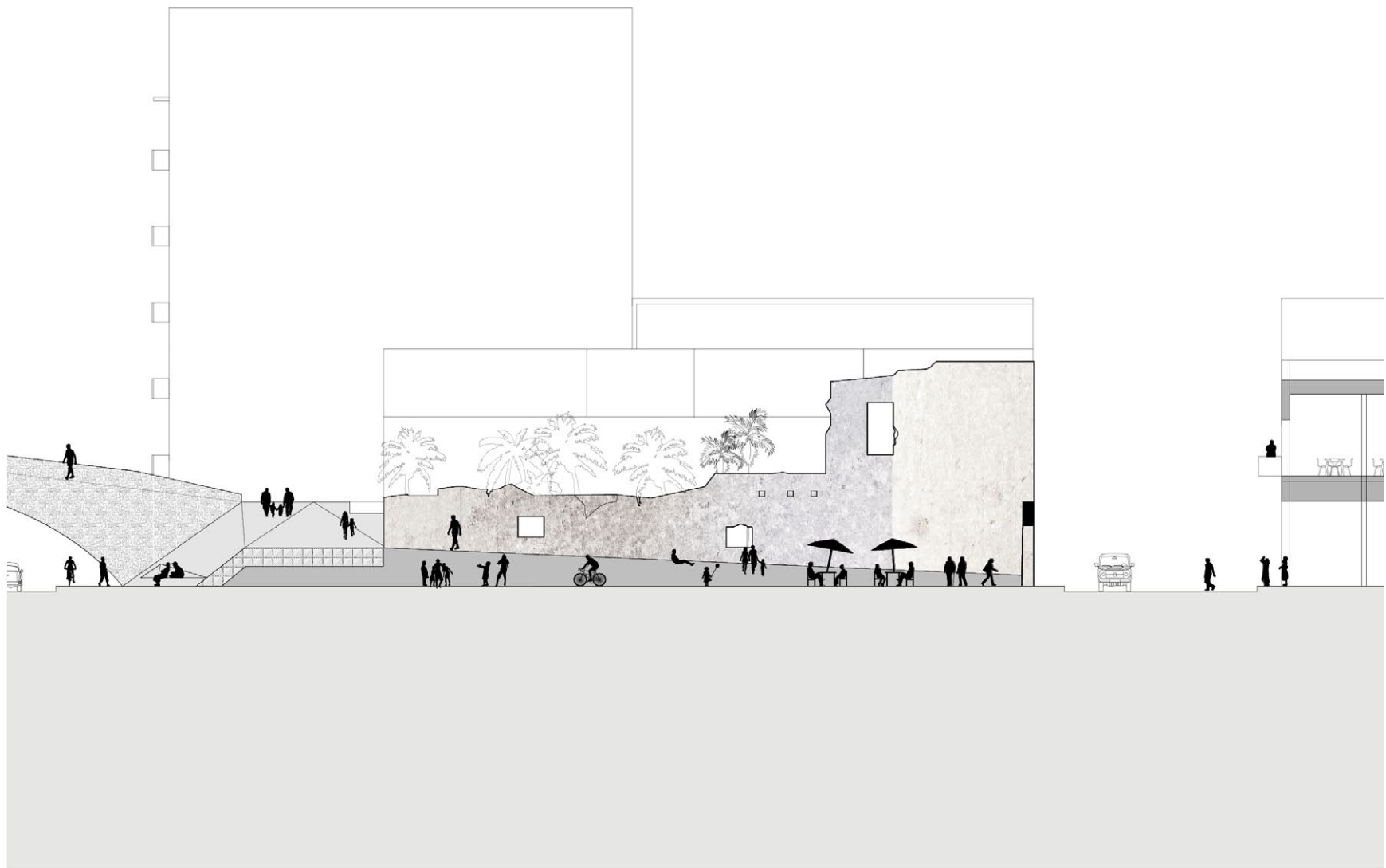




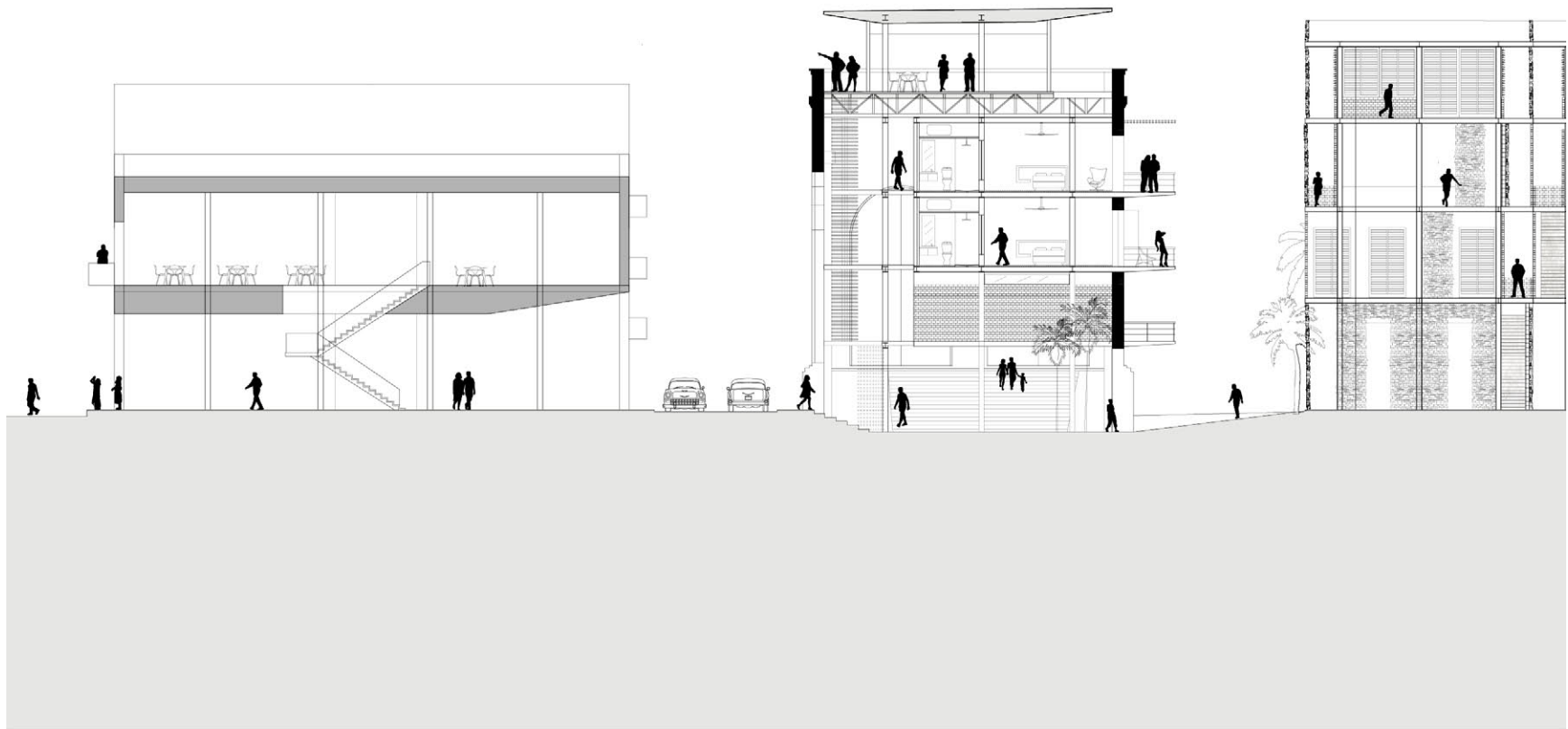


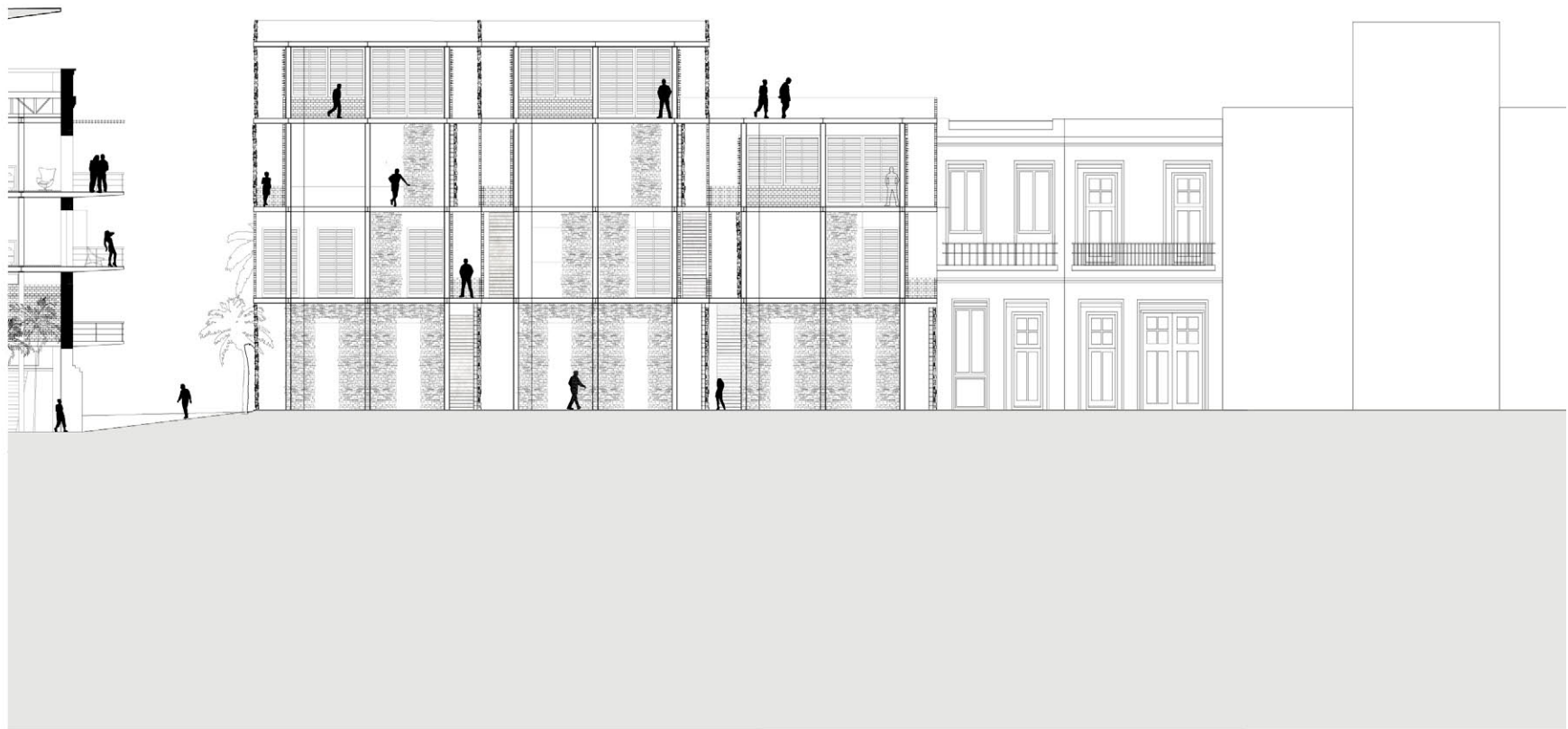


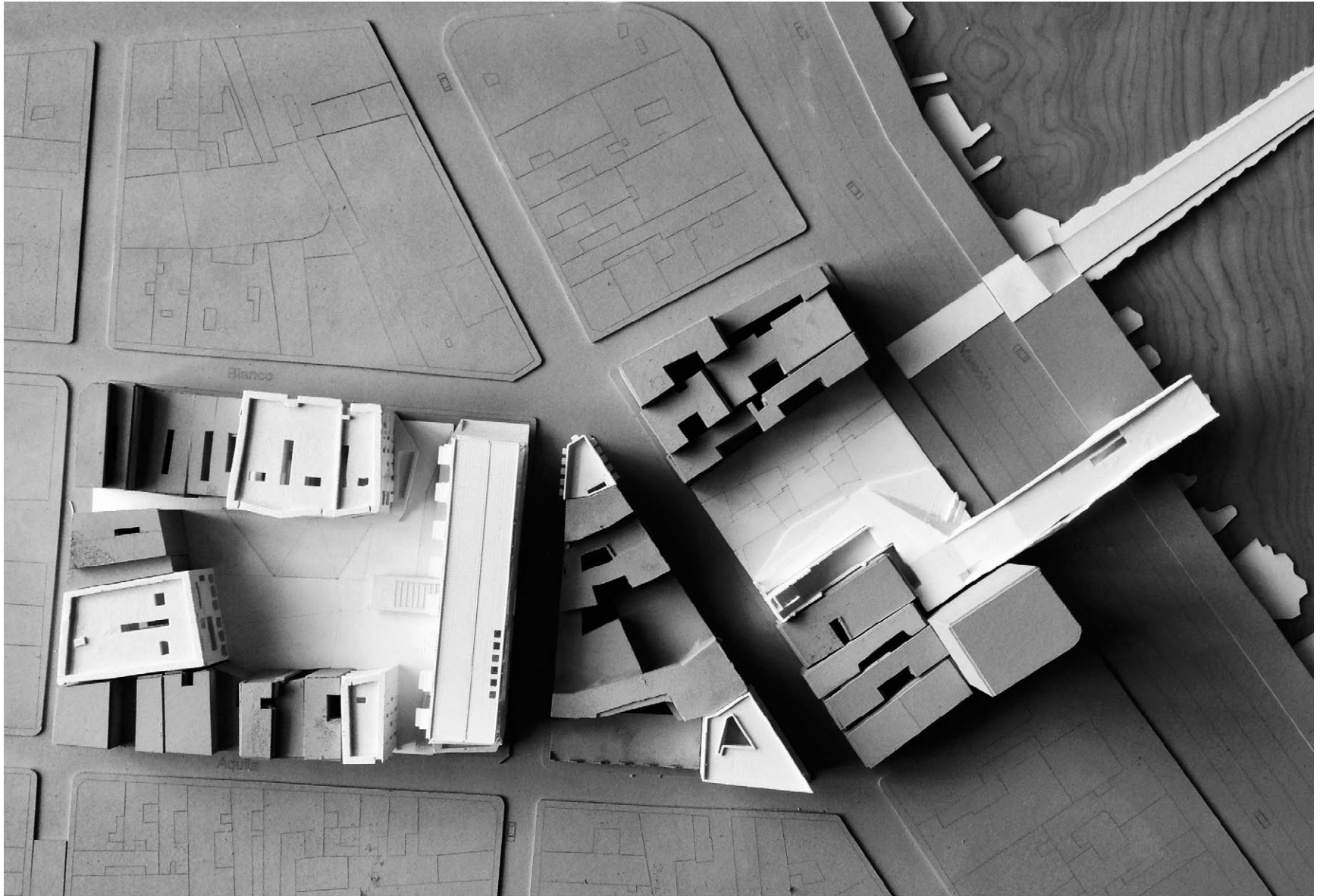


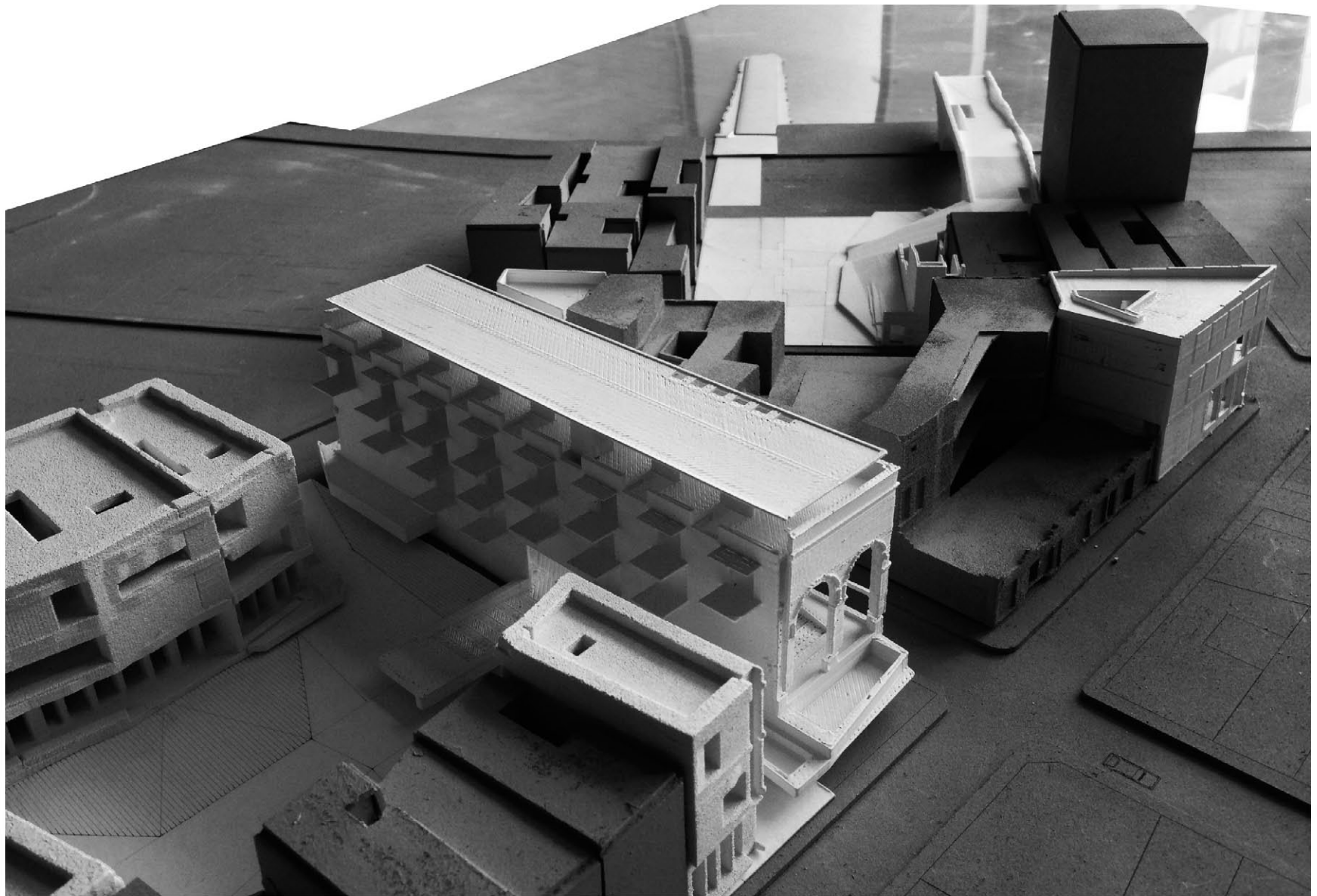


Section: Longitudinal cut of entire site from jetty at ocean to southern most courtyard + housing









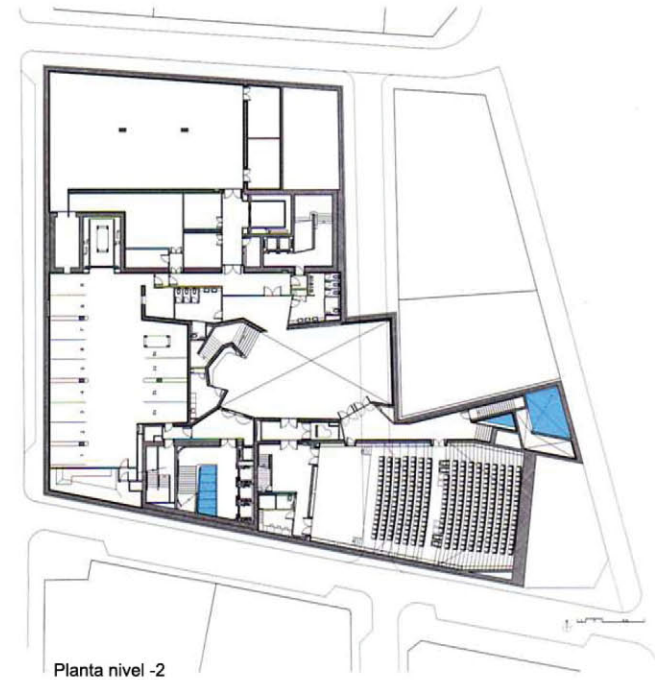
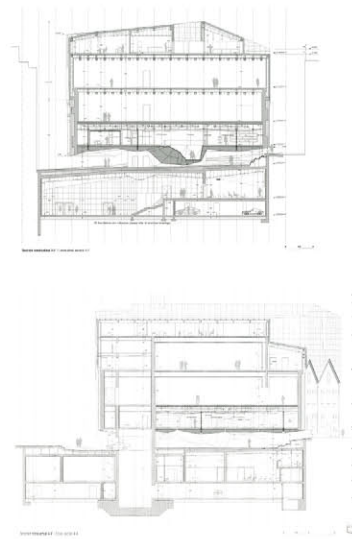
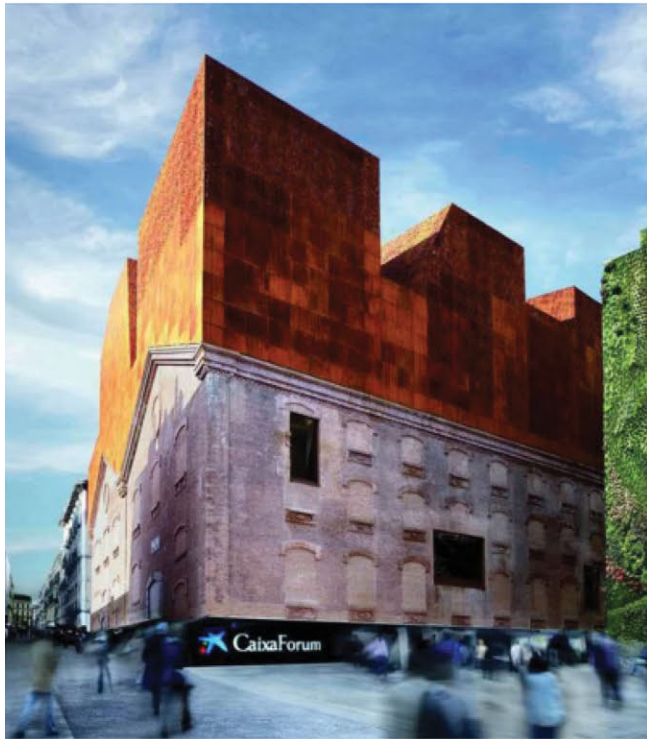








APPENDIX | Precedent Studies
Pecha Kucha Night
Thesis Defense
Bibliography

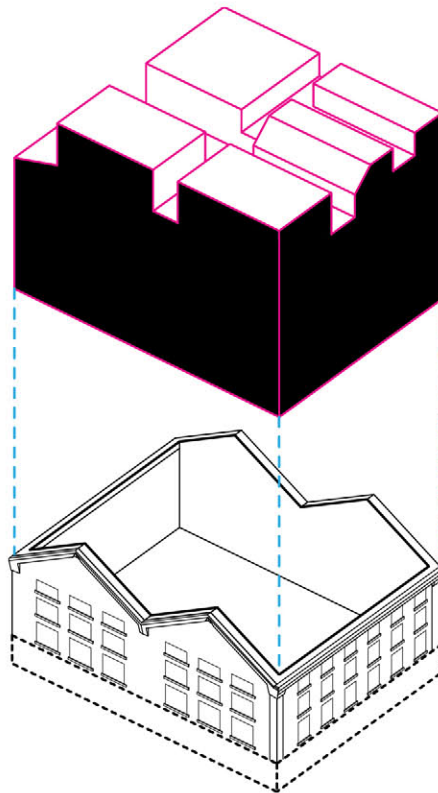


CAIXA FORUM

Architect: Herzog & de Meuron

Location_ Madrid, Spain

The Caixa Forum is located at the center of Madrid's cultural district. It is located in close proximity to the Reina Sofia and Prado Museum's. The architects lifted the existing historic building to make it appear floating and invite visitors into the building. The original building was a power station built in 1899 and was one of the last great examples of industrial architecture in the city. "The only material of the old power station that we could use was the classified brick shell. In order to conceive and insert the new architectural components of the CaixaForum Project..."-H&dM

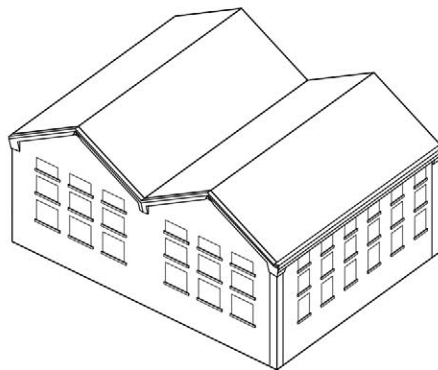


FILL SHELL

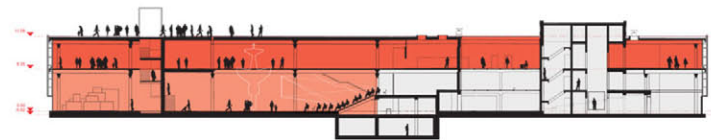
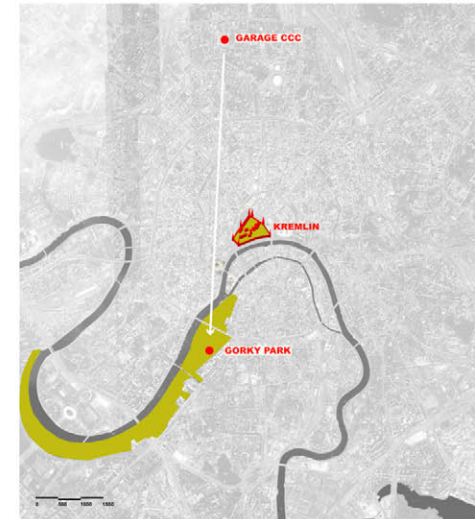
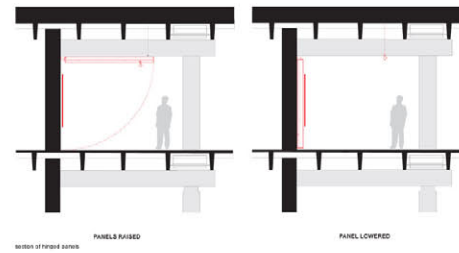
2. NEW BUILDING EMERGES FROM PRE-SERVED FACADES, CREATING CLEAR OLD + NEW

CUT / LIFT BUILDING

1. TAKE EXISTING BUILDING AND REMOVE BOTTOM TO CREATE ENTRY + GUT INTERIOR



EXISTING INDUSTRIAL BUILDINGS
PARTIALLY PRESERVED



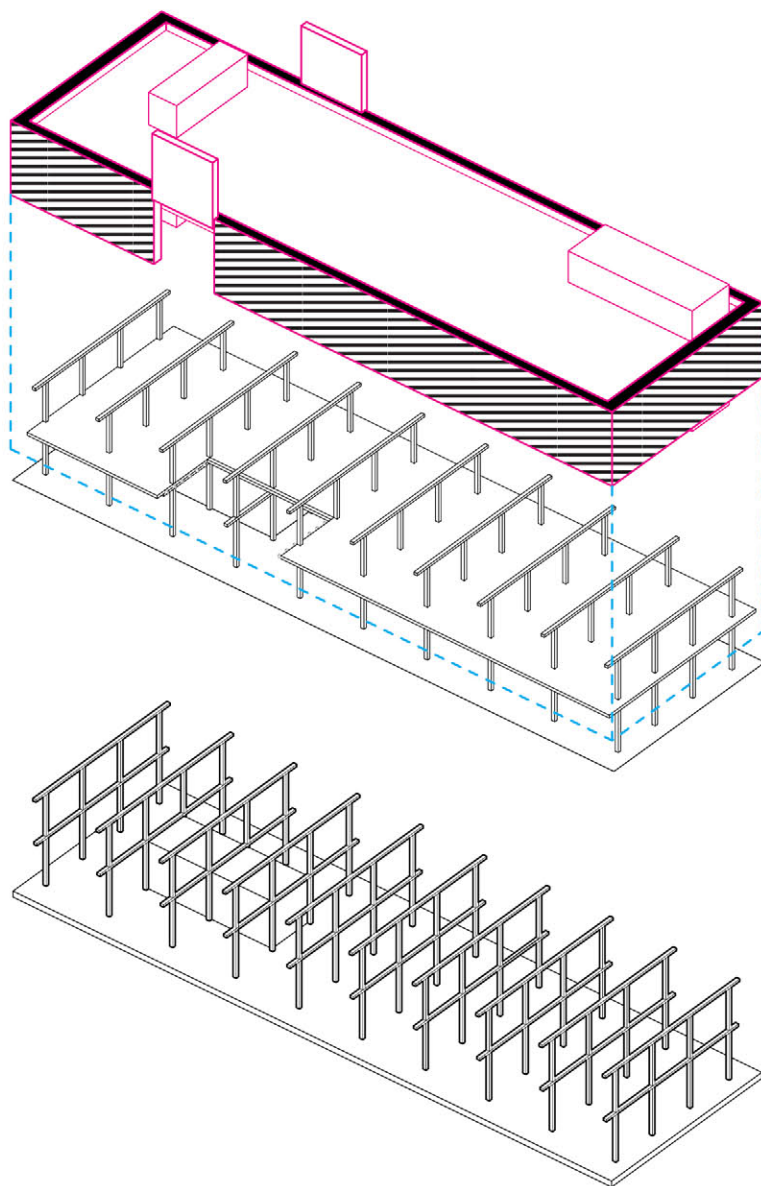
GARAGE CENTER FOR CONTEMPORARY CULTURE

Architect: OMA

Location_ Moscow, Russia

This project is a new gallery and exhibition space transformed from a derelict building in Moscow Russia. All that remained of the 60's Socialist building was the massive structure and graffiti and brick filled interior. OMA decided to wrap the existing structure and preserve the gritty interior for the galleries. 'we are very happy to work on turning the almost-ruin of vremena goda into the new house for garage. we were able, with our client and her team, to explore the qualities of generosity, dimension, openness, and transparency of the soviet wreckage and find new uses and interpretations for them.'

- Rem Koolhaas



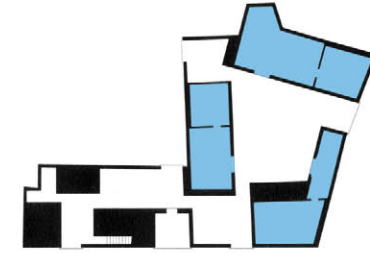
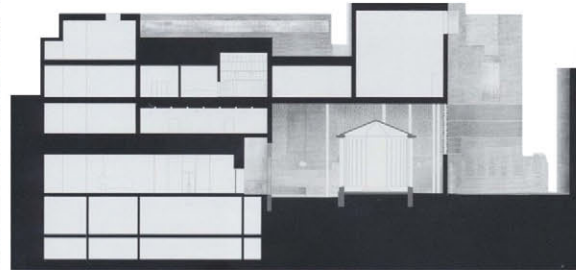
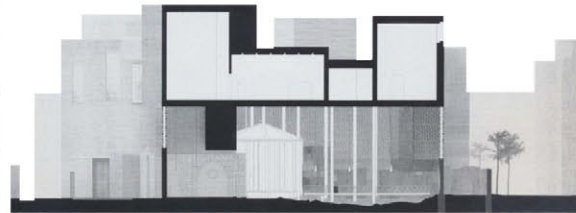
WRAP EXISTING

2. NEW EXTERIOR ENVELOPE USES EXISTING WAREHOUSE CORE AND STRUCTURE AS EXHIBITION SPACE IN MUSEUM

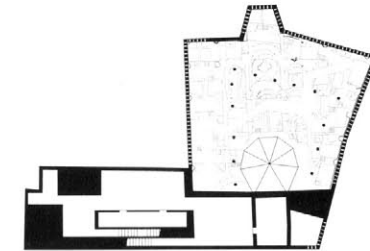
MAINTAIN + UTILIZE

1. KEEP STRUCTURAL BONES + GRAFFITI WALLS OF DILAPIDATED BUILDING

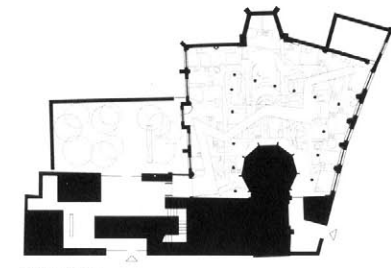
OVERSIZED STRUCTURE FROM SOVIET ERA BUILDING ABANDONED AND IN DISREPAIR



2nd exhibition level



1st exhibition level



ground level

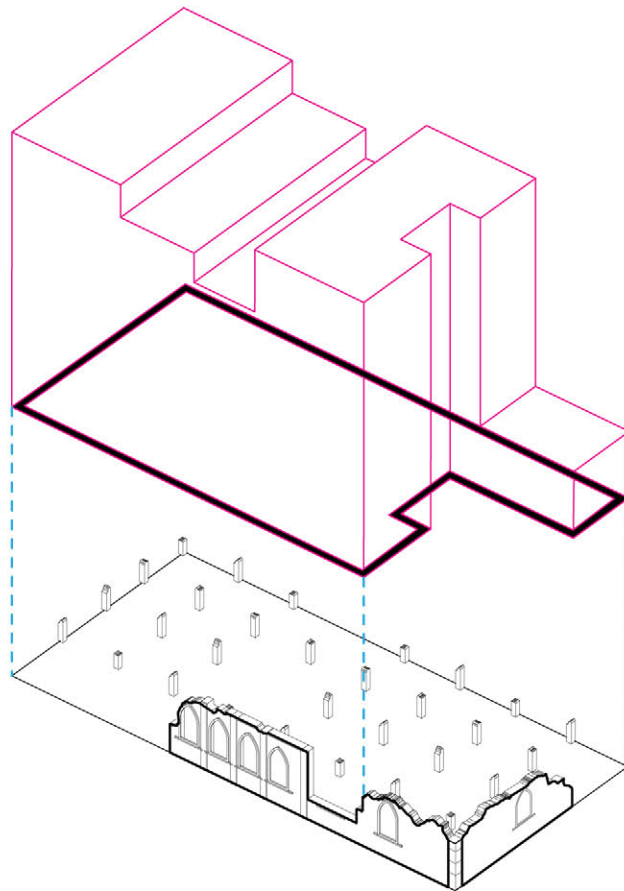
KOLUMBA ART MUSEUM

Architect: Peter Zumthor

Location_ Cologne, Germany

This project is located in Cologne, Germany in the city centre.

The project salvages an ancient archeological site as well as the remaining walls of the medieval chapel. Zumthor's new intervention follows the old church plan to reconstitute it in Cologne's urban fabric. The grey brick of the new monolith building is detailed to intermix with the tuffs, basalt and bricks of the ruins. The new building designed by Peter Zumthor transfers the sum of the existing fragments into one complete building.

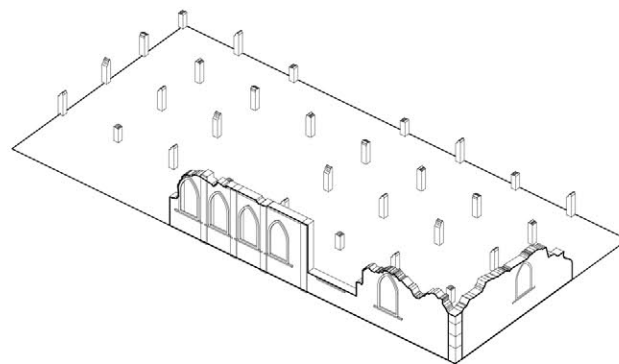


ENCLOSE RELIC

2. NEW STRUCTURE, MAINTAINS ORIGINAL CHURCH FOOTPRINT + CREATES A MUSEUM OVER RUIN

PRESERVE + EXHIBIT

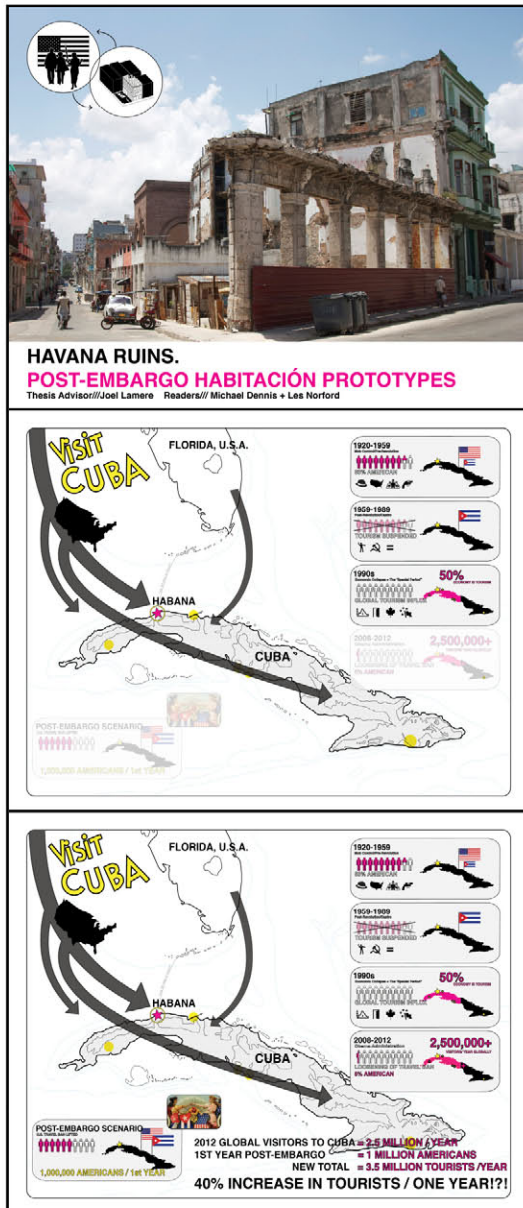
1. KEEP PARTIAL FACADE + PRESERVE AND BUILD OVER RUINS, KEEPING THEM PROTECTED



EXISTING RUINS AND PARTIAL FACADE

PechaKucha or Pecha Kucha (Japanese: ペチャクチャ, IPA: [pet̚ɕa ku̚t̚ɕa],[1] chit-chat) is a presentation methodology in which 20 slides are shown for 20 seconds each (six minutes and 40 seconds in total). The format, which keeps presentations concise and fast-paced, powers multiple-speaker events called PechaKuchaNights (PKNs)[2] or Pecha Kucha Nights.[3]

<http://en.wikipedia.org/wiki/PechaKucha>



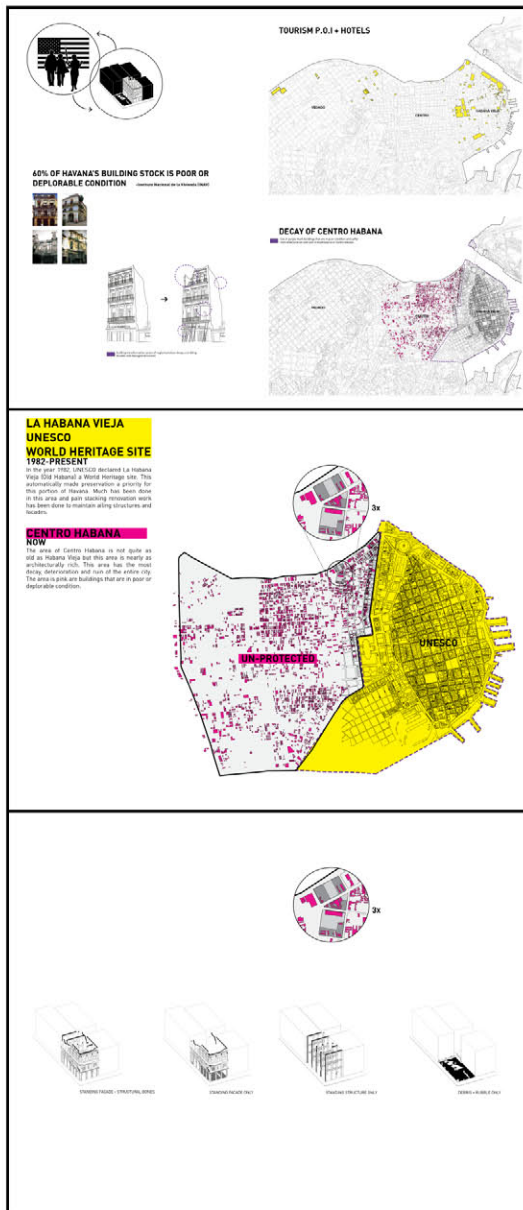
Slide 1: intro the city of Havana Cuba has 2 major problems / opportunities it will face in the near future.

1. is a huge tourism influx via a post-embargo situation
2. is a massive chunk of decay and ruin in the center of Havana

I am interested in looking at several prototypes that can deal with these issues in Havana by testing one chunk of in Centro.

Slide 2: Since the turn of the century Cuba has been a playground for Americans and tourism was controlled by the U.S. Once the revolution began, tourism was suspended. After the collapse of the U.S.S.R. came a new influx of tourism, starting what Fidel coined "the special period". By 1997 Cuba's economy was 50% supported by the industry, eclipsing the thriving sugar industry.

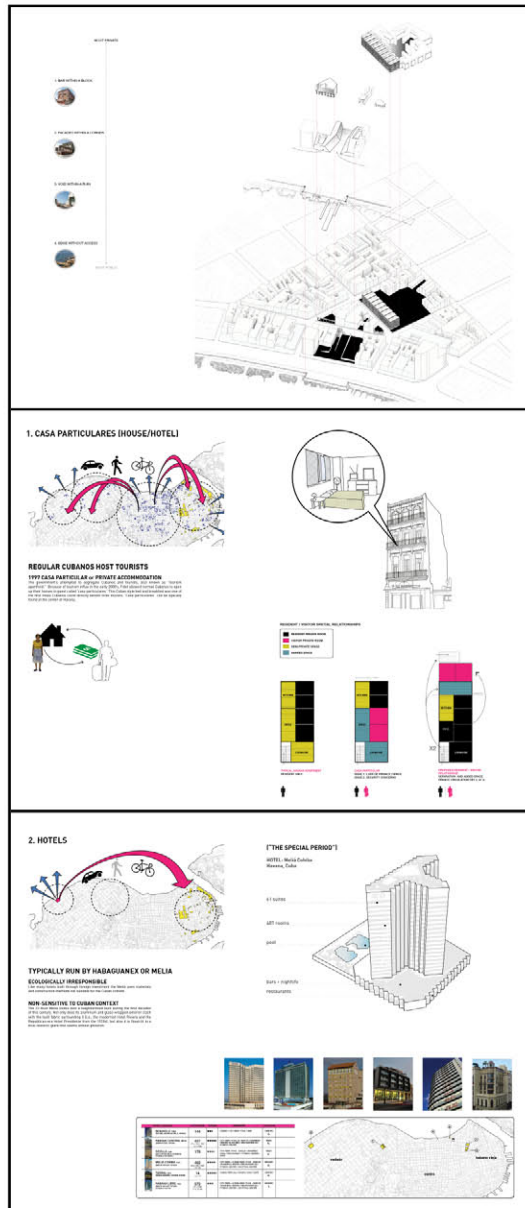
Slide 3: Since 2009 New Obama reforms have loosened of travel to Cuba by U.S. Citizens. Cuba currently sees around 2.5 million visitors to the island each year with less than 5% being Americans. The international monetary fund predicts that during the 1st year the travel ban is lifted post embargo 1 million Americans will visit the island. That signals a 40% increase in tourists in just one year.



Slide 4: So here is Havana now. You have Vieja to the east, Centro in the middle and the 1950s planned area of Vedado west. The top map shows that most tourism points of interest and hotels happen in in the old part of the city in the east and Vedado mega hotels to the west. Leaving a question mark on the center of the city. Centro is the densest and most badly decaying portions of the city.

Slide 5: The diagram shows in purple the 60% of Centros buildings stock that is currently in deplorable condition and unprotected. The yellow is Habana Vieja and has been a Unesco world heritage site since 1982, and a huge preservation effort has been underway for years. Centro can become a new prototype to handle this huge demand of accommodation that is in the future for Havana.

Slide 6: The majority of these sites in this decaying area of Centro follow 4 basic categories in the housing sector. One is Standing facade + structural bones, 2. is standing facade only. 3 is standing structure only and 4 is debris and rubble only. The site swath in centro I am interested deals with several of these issues of decay and could act a a new prototype for future tourism growth.



Slide 7: The 4 areas of decay I am looking at are with the bar within a block, a facades within a corner, void within a ruin and edge without access. From the block to the ocean I am interested in creating a spectrum of most private at the block to most public, to more shared conditions at the center triangular block, then to the a ocean front plaza and finally the most public at for community swimming access point for Cubanos and tourists.

Slide 8: So there are two major forms of accommodation that exist within Havana, you have the casa particular which acts as both home and lodging for visitors. Its affordable and has brought a new middle class to Havana. The issues are loss of privacy in the home and security, The basic plan of a Havana apartment looked like this a diagram then rooms are added for guests and the house is subdivided. I am interested in a casa particular 2.0 that redefines this spatial relationship.

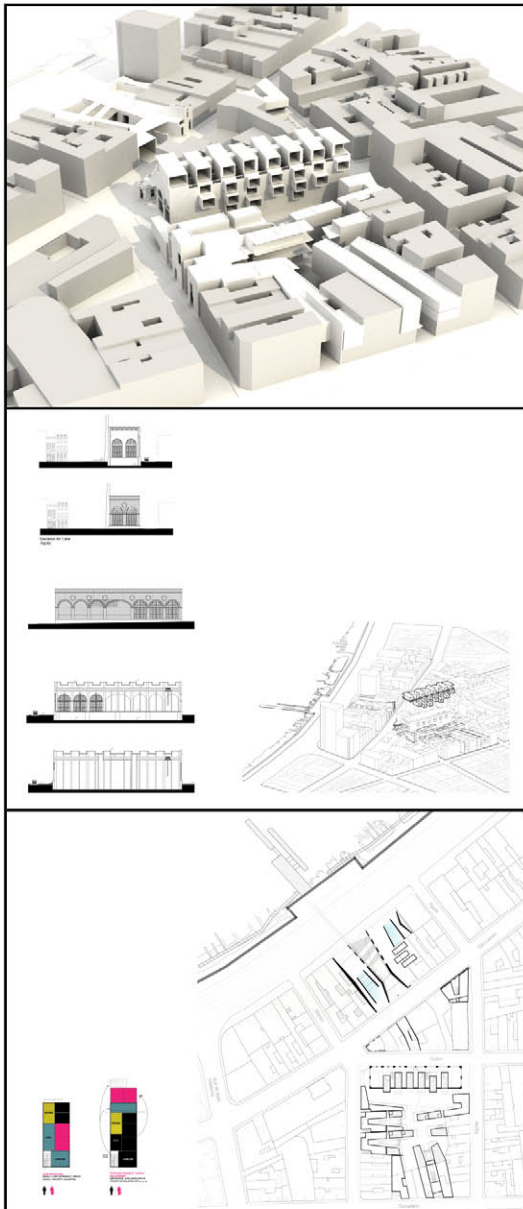
Slide 9: The other form of accommodation is the more traditional hotel which is more isolated to the edges of the city and not in Centro. Most of these hotels have little response to the Cuban climate and non sensitive to the context. So I am interested in a scale of accommodation that can potentially works between the micro and the mega.



Slide 10: For the Caribbean Cuba is quite low on hotel capacity utilization 30 rooms/visitor compared to 70 in the Bahamas. So rooms will be in short supply, at 3.6 million visitors an additional 10,000 rooms will be needed in Cuba or about 6,000 just in Havana. The future tourist profile for the U.S. Will be baby boomers, backpackers and businessman that can now access the island.

Slide 11: The site sits near the Malecon which becomes a place where Cubanos and tourists collide looking north at the dramatic straits of florida. In the figure ground you can see that these sites sit near the Malecon which acts as Havana porch, a long open linear space on the ocean. The goal is to create a link between the sites to the ocean. The heart of the project is the Planta Elctrica brick structure built in 1900. It stands out in the urban fabric compared to the dense courtyard packing.

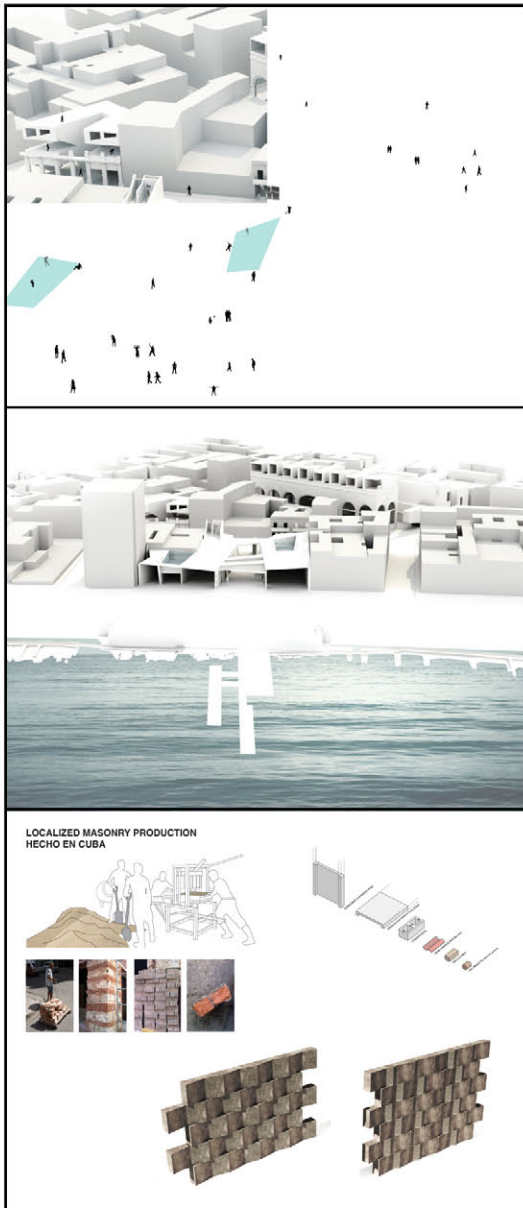
Site 12: Plantea Elctrica is in bad condition and been abandoned since the cable car system was removed from Havana in the 50s. I am interested in a number of simple operations to the building. One would be puncturing the box. 2nd Opening up the brick enclosed arches and reusing the material. 3rd is to pop the existing poor light ceiling system in order to create a new lighting system for the interior as well as insert program in form of visitor rooms.



Slide 13: The back of the building is solid brick to the south and the new program would start to puncture the back facade in order to create light for the new accommodation. These spaces would look out to a new courtyard in the urban fabric as well as plugging into and respecting the context but creating a new condition in the interior.

Slide 14: Due to Planta Elctrica section change a new more public ground can be thought of that helps to open up the building to the street and block. Rooms could then be both suspended and embedded with the structure of the shell above the new ground.

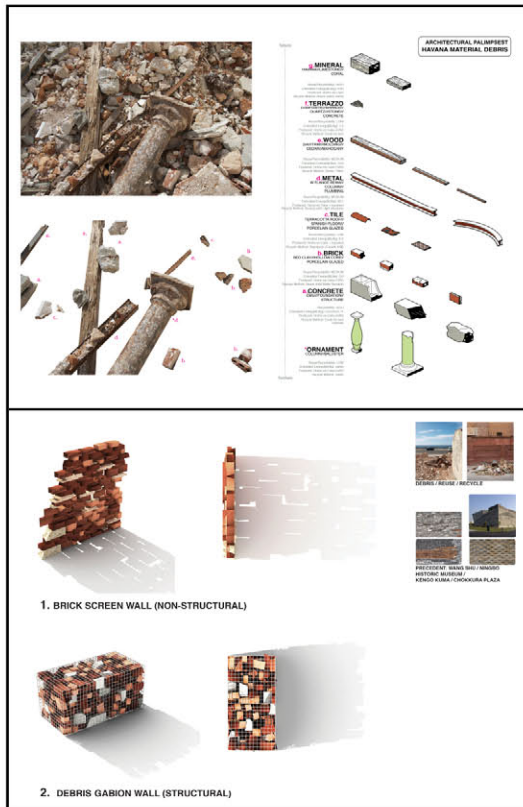
Slide 15: The block becomes new housing prototype that also allow for visitor accommodation in the courtyard or center of the block. This allows for a unified street condition that works with the context as well as creating a new situation for tourism in the center.



Slide 16: The triangular block becomes more public and more shared with the standing facade becoming the screen for a new hostel which is foreign the Cuban tourism game. Many of these buildings in the block are in extremely bad condition and will be used to create a path through the sites to the Malecon and then ocean.

Slide 17: The movement continues in the form of a plaza in the ruin that allows for the Malecons carnivals and nightlife to seep into. The new plaza will hold market spaces for vendors and a place of exchange for locals and visitors. The final link is the connection to the ruin at the edge of the ocean. This new access point allows people to engage with the ruins of the old seawall and the ocean.

Slide 18: The next step in this project is how to utilize building material in a city so full of character and materiality. The architecture should respond to current construction techniques but look for new ways to have them work with the environment of the Caribbean. Localized masonry production could be used to create new forms of building blocks that can shade themselves and break down scale.



Slide 19: The larger question of materiality is what to do with all the debris that sit all over Centro Havana. The picture above is a sample of material available already existing on the site. Everything from mineral, terrazzo, wood, metals, terracotta tile and bricks, concrete and architectural ornament are available.

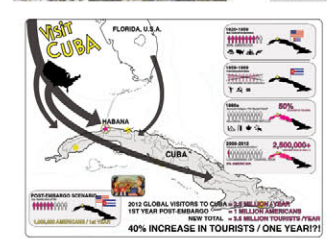
Slide 20: The most abundant of these is the terracotta brick debris. These materials can be reused in the new architectural elements for new construction. Brick screening walls can become approaches to deal with the need of shading. The other opportunity could be a more structural one in the form of Gabion walls using larger chunks of concrete and terracotta masonry.

APPENDIX | Thesis Defense
December 20th, 2012



HAVANA RUINS

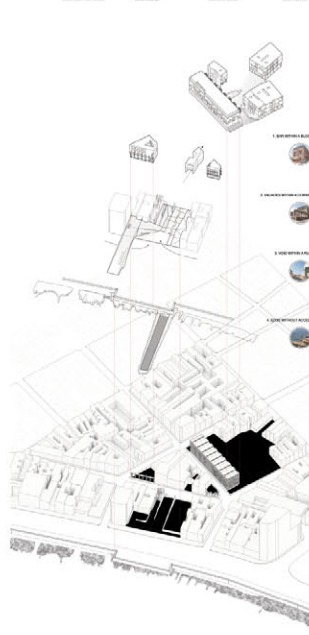
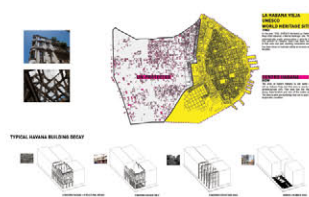
REFORM/DECAY//TOURISM/FUTURE



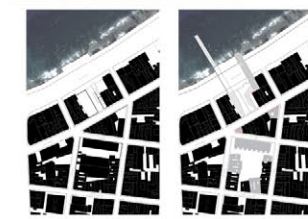
HABANA//INFRASTRUCTURE//DETERIORATION



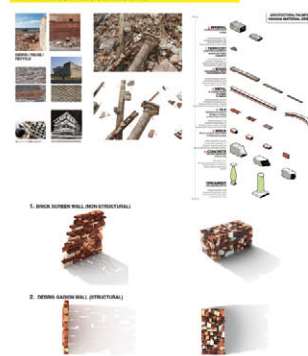
POST-EMBARGO REGENERATIVE HABITACIÓN PROTOTYPES



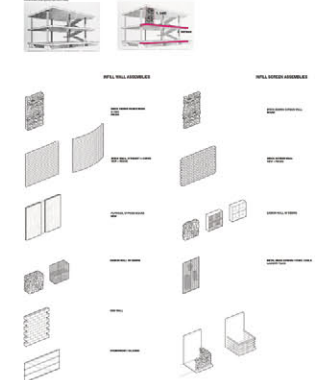
REUSE//HABITACIÓN//SITE



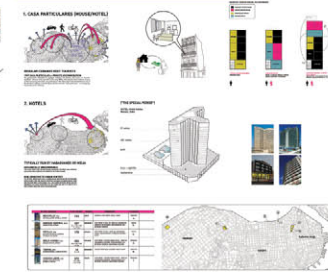
MATERIALS//REUSE//LOCAL



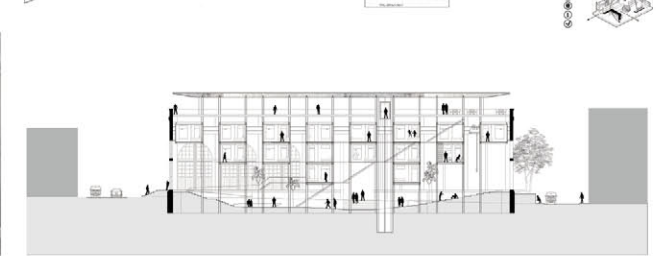
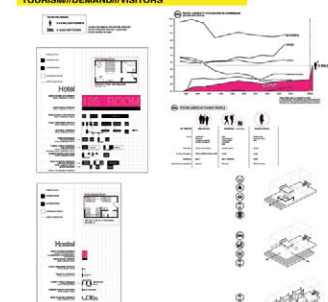
LOCALIZED MASONRY PRODUCTION HECHO EN CUBA

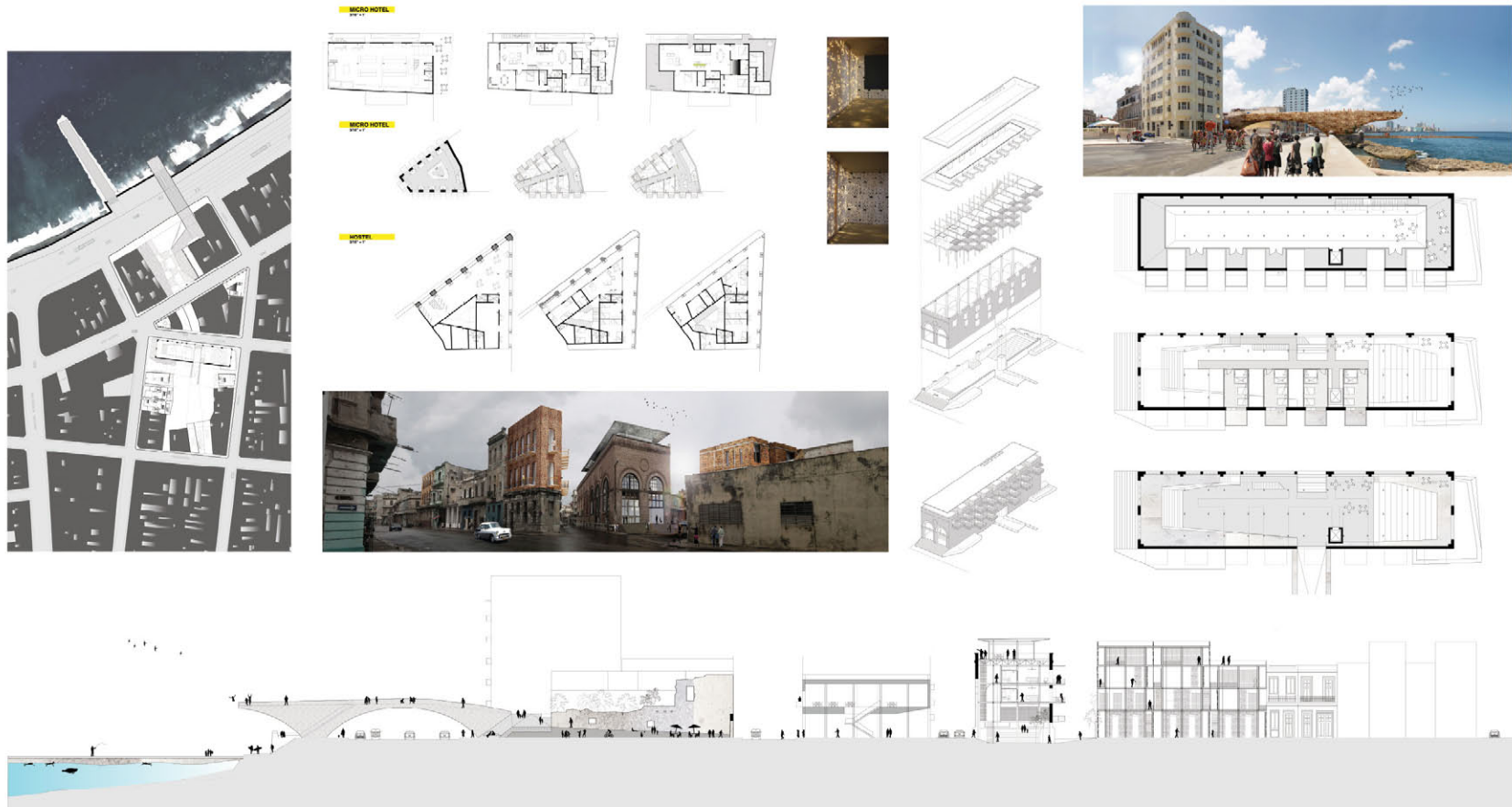


HABANA//TOURISM//TYPOLOGIES



TOURISM//DEMAND//VISITORS





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